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The influence of cultural dimensions on entrepreneurial intention in Madagascar's rural areas

Fenosoa A Ratsimanetrimanana

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation (MMENVC)

Johannesburg, 2014

ABSTRACT

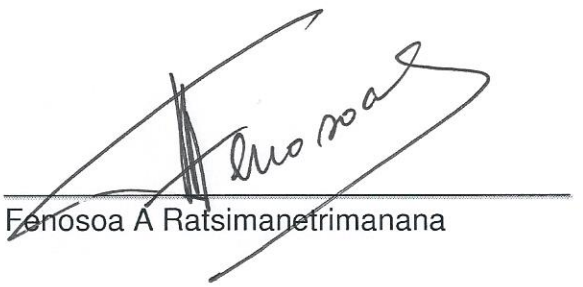
Understanding the triggers of the intention was, is and will be at the heart of scholars' preoccupations when dealing with the universe of entrepreneurship. This unique pioneering research aimed at comparing the Malagasy main ethnic groups in terms of measures of cultural dimensions and perceived desirability and examining the effects of this perceived desirability on the relations between cultural dimensions and entrepreneurial intention.

A non-experimental cross-sectional survey, based on a cluster sampling with quota approach comprising three sub-samples of ethnic groups and a structured questionnaire directly administrated by trained interviewers, was the source of data of the research. The use of relevant robust statistical tests characterised the data processing of the research, which revealed that there is no important difference in the measures of cultural dimensions among main ethnic groups in Madagascar's rural areas. The level of perceived desirability and the relationships between cultural dimensions and entrepreneurial intention are not importantly moderated by perceived desirability among the main ethnic groups in Madagascar's rural areas. Furthermore, it has been discovered that to some extent, Madagascar would not be a country of ethnic diversity and beginning to understand the Malagasy entrepreneurial profile based on cultural dimension, perceived desirability and entrepreneurial intention is possible.

Within the context of an unprecedented level of poverty of the population of Madagascar, which strangles the way to a harmonious and sustainable development, the findings of the research would make an invaluable contribution to the setting up or the refining of policies and strategies targeting the promotion of entrepreneurship in general and self-employment in particular. It is broadly acknowledged that the key to alleviating poverty is based on the encouragement of self-employment of all individuals.

DECLARATION

I, Fenosoa A Ratsimanetrimanana, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation (MMENVC) in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.



Fenosoa A Ratsimanetrimanana

Signed at Johannesburg

On the 25th day of May 2014

DEDICATION

To my beautiful wife and my beloved sons,
with profound respect for my late father
and my always young mother.

God willing, nothing is impossible.

"Overcoming poverty is not a task of charity. It is an act of justice. Like slavery and apartheid, poverty is not natural. It is man-made and it can be overcome and eradicated by the actions of human beings. Sometimes it falls on a generation to be great. YOU can be that great generation. Let your greatness blossom."

Nelson Mandela

ACKNOWLEDGEMENTS

My first words are to thank the Almighty God who gave me health and energy throughout this exciting and enthralling travel of preparation of the Master's degree of Management in Entrepreneurship and New Venture Creation (MMENVC).

Then, I would like to convey my deep gratitude to Professor Boris Urban for accepting to supervise this work. His judicious advice was to me an invaluable contribution to strengthening my steps towards the difficult pathway of capturing the genuine entrepreneurial mind-set.

But, my humble knowledge with regard to entrepreneurship could never be as well moulded without that which has been transmitted with true passion by our eminent professors and valorous contributors. It is the same for my very brave schoolfellows whose priceless contributions during the various courses were most appreciated. I will not forget my brother Professor Rijamampianina Rasoava for his precious time, discussing our country and from which the subject of this research germinated. All of you will find here the expression of my insightful recognition.

The administrative staff of Wits Business School also deserves to be mentioned, their role was the driving belt in the fluxing of the relationship between students and the administration. Sincerely, I thank you very much.

I cannot hide the remarkable work of the teams on the ground (supervisors and interviewers), their enthusiasm and professionalism allowed the collection of invaluable data; which, once processed, constituted the raw material for this research. It is worth noting that these data could not be collected without the goodwill of all the interviewed people and the frank collaboration of the relevant administrative authorities in delivering on time all required authorisations. For all of you, a thousand thanks.

Last, but not least, I could never have arrived at the end of this prestigious training program without the deep understanding of my family. Profound gratitude to my adorable wife for her patience and unwavering support. My high appreciation also to my beloved sons for not making a great case for the fact that I was absent at home while being present at school for long months.

Definitely, "*I can do everything through him who gives me strength*" (Philippians 4: 13). To Him alone would be the endless Glory!

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CHAPTER 1: INTRODUCTION

This chapter describes and explains the purpose of the research as well as its evolving context and its underpinning problem statement. The significance of the research articulates among other gaps in related theory. The delimitation of the research followed by the assumptions of the research close this chapter.

1.1 Purpose of the research

The purpose of this research was to scrutinise the influence of cultural dimensions on entrepreneurial intention among ethnic groups in Madagascar's rural areas.

1.2 Context of the research

Defined as the unit of knowledge, know-how, traditions and habits suitable for a human group, a civilisation, culture includes very broad aspects of life in society: manners, morals, lifestyle, system of values, beliefs, religious rites, organisation of the family and the village communities (Toupictionnaire, 2013). In other words, culture could be understood as the collective setting of the mind, which differentiates the members of one community from another (Hofstede, Hofstede & Minkov, 2010). The collective dimension of culture is especially because it is shared by individuals who evolved in the same social environment, the platform where it was inculcated.

Thus, it is worthwhile to note that culture is transmitted socially, from generation to generation and not by genetic heritage (Hofstede, et al., 2010). Mainly, it conditions the individual behaviours. At the individual level, culture is all the knowledge acquired by a human being. However, a clear distinction should be made between culture, human nature and individual personality as described by Figure 1:

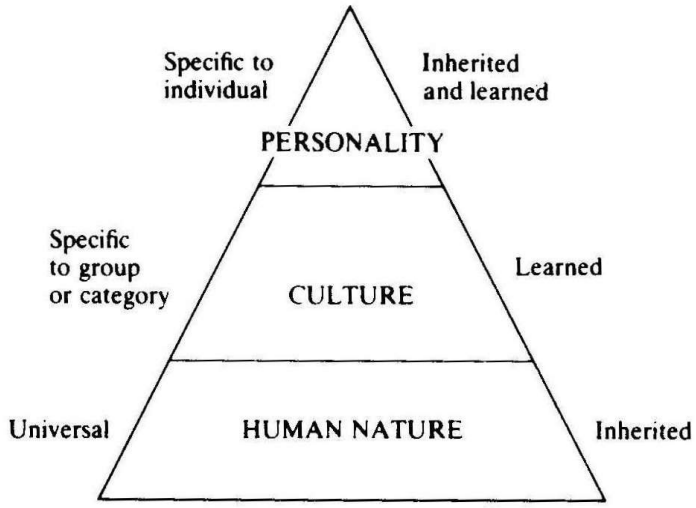

Figure 1: Three levels of uniqueness in human mental programming
(Hofstede, et al., 2010)

If human nature is universal and inherited, the culture is learned and specific to a group or category contrarily to the personality, which is inherited, learned and specific to individual.

On the other hand, an ethnic group refers to a group of individuals who share the same culture, the same language, the same traditions and the same habits, which are transmitted from generation to generation (Toupictionnaire, 2013). As for ethnicity, it is the character of something that comprises characters specific to an ethnic group. It is the desire to share common aspirations as the result of shared language, habits, physical resemblance or lived history (objective or mythological). This concept is the basis of the concept of identity (Weber, 1948).

As scholars argued that the link between culture and entrepreneurship exist and developed conceptual models accordingly (McClelland, 1961; Schumpeter, 1947; Weber, 1948), it is understandable that belonging to an ethnic group has somehow been considered a predictive factor for the differences in entrepreneurial behaviour and performance.

However, the findings of related research did not always come to the same conclusions. A study of some ethnic groups in Nigeria showed a difference in entrepreneurial performance (Harris, 1968 cited by Mungai & Ogot, 2011). In Kenya no relationship between ethnicity and entrepreneurship was discovered (Marris & Somerset, 1971 cited by Mungai & Ogot, 2011) but significant differences in entrepreneurship proclivity and entrepreneurship insights were demonstrated among four ethnic communities (Mungai & Ogot, 2011).

Located south of the equator, in the Indian Ocean, Madagascar is the fifth largest island of the world in surface area (592,040 square kilometres) after Australia, Greenland, New Guinea and Borneo and is separated from the African continent by the Mozambique channel. The distance between the west coast of Madagascar and the coast of Mozambique is of approximately 400 kilometres. Madagascar's neighbours are: the archipelago of the Comoros (300 kilometres to the north-west), Reunion Island (600 kilometres to the east), Mauritius (800 kilometres to the east) and Seychelles (850 kilometres to the north).

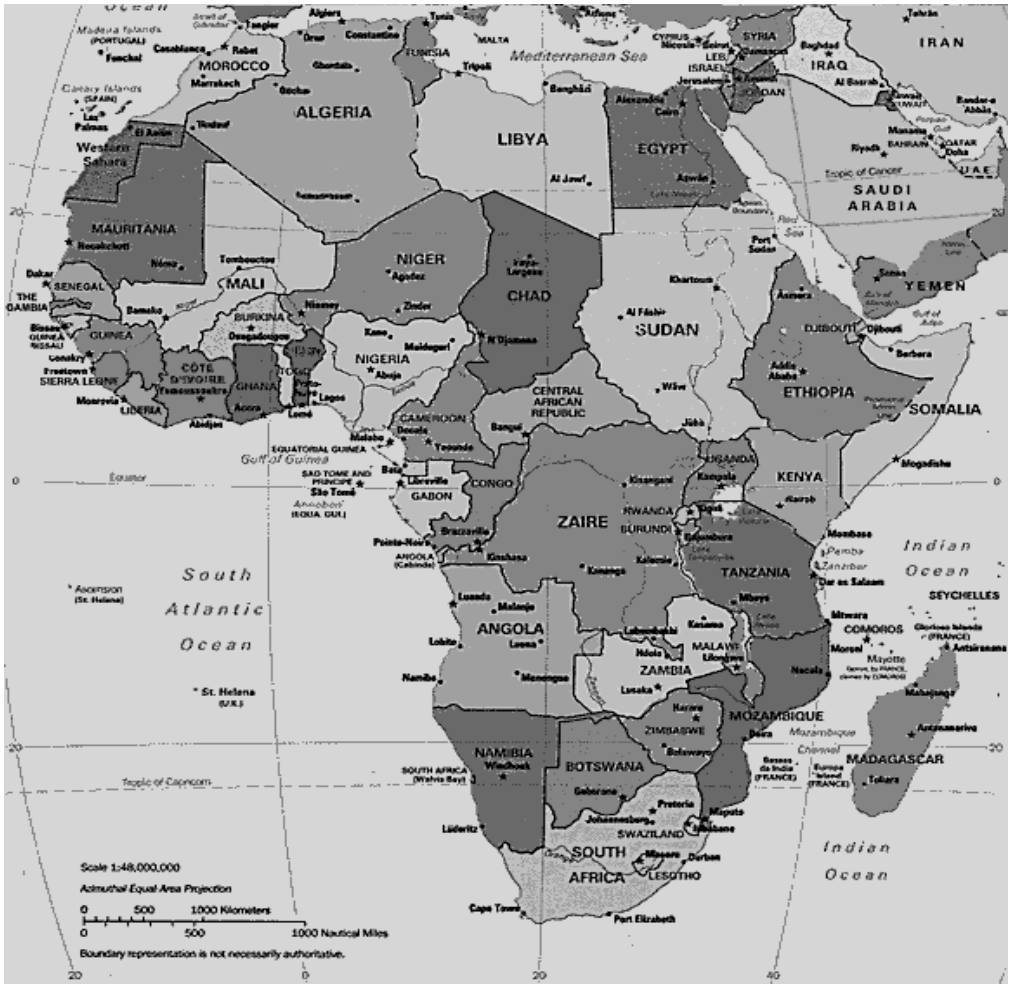

Figure 2: Localisation of Madagascar in Africa
(World Map Finder, n.d.))

This large island, sometimes called “the Red Island” in reference to the laterite which colours its plates, stretches itself over 1,580 kilometres north to south and measures a maximum of 575 kilometres east to west. It counted 20.8 million inhabitants in 2010 of which 20.3 percent lived in urban areas against 79.3 percent in rural areas (Instat, 2011). The Malagasy people are of mixed Malayo-Indonesian and African-Arab ancestry. They are subdivided into 18 ethnic groups and speak the same language – Malagasy – with different intonations depending on the region of origin.

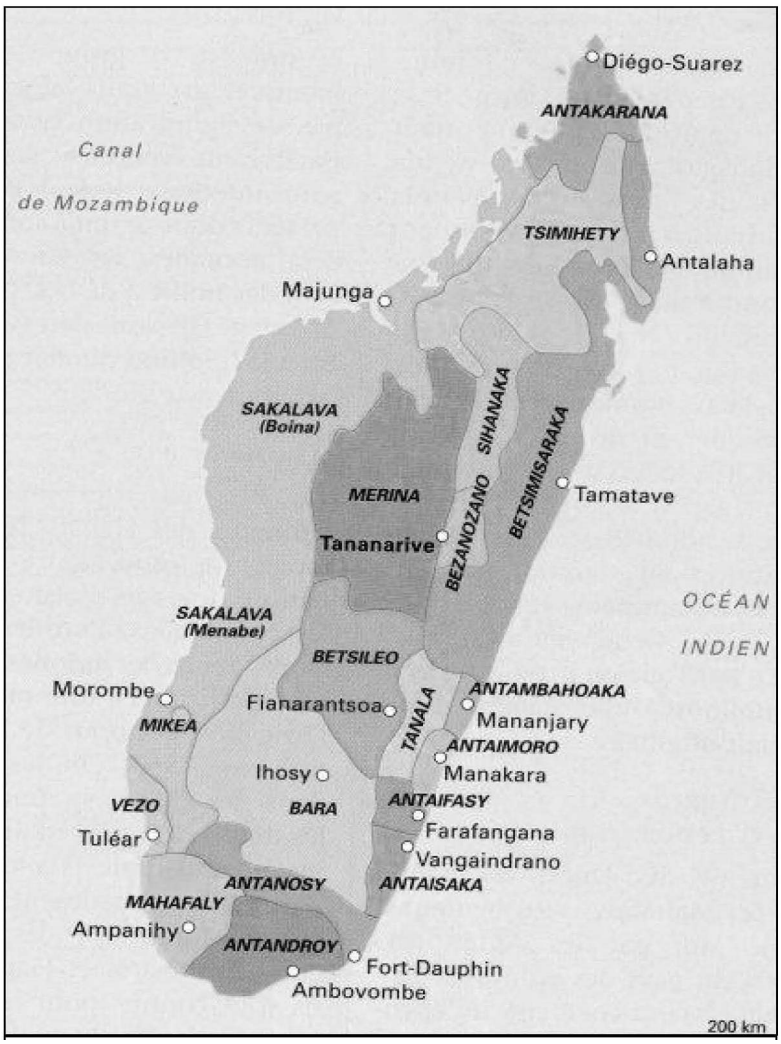

Figure 3: Localisation of ethnic groups in Madagascar
(Mussard, n.d.)

As many former colonial countries, Madagascar experienced different political and economic governance resulting in a deceiving development performance. Today, the country is on a slow economic growth and an unbelievable political brain teaser.

Ranked number 151 of 186 countries by the United Nations Development Programme (UNDP) with regard to human development (UNDP, 2013), 92.6 percent of Madagascar's population lives on less than USD2 per day and 81.3 percent on less than USD1.25 per day (University of Oxford, 2013). The Gross Domestic Product (GDP) per capita of Madagascar was USD238.17 in 2012 (Trading Economics, 2013).

Equivalent to 2 percent of the world's GDP average, the GDP per capita of Madagascar was around USD315.44 from 1960 until 2011, attaining a record high of USD433.78 in 1971 and the lowest value in 2002 of USD219.71.

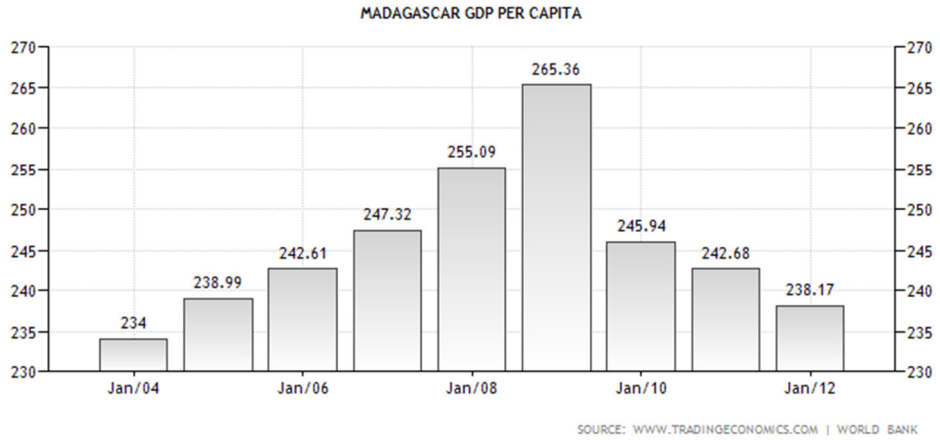

Figure 4: Madagascar GDP per capita
(Trading Economics, n.d.)

Madagascar has displayed a disappointing economic performance for at least five decades. The economic growth remains too weak and, when it occurs, it is too unevenly shared to cause a significant reduction of poverty. In other words, not only are most households on average poorer today than in 1960, but also as the population grows, so does the number of poor; low economic growth being insufficient to decisively reduce the number of the poor in the country. Clearly, poverty continues because the low profits obtained after each period of growth are neutralized by the eruption of political crises, in particular in the cities, and by the weak participation of the rural areas in the growth. This is constrained in particular by poor yields in the agricultural sector and the lack of capacity of the growth to create remunerative jobs (World Bank, 2013).

Based on this context and considering the broader framework of existing theory and research related to the set of themes on culture and entrepreneurship such as the model on national culture distinction developed by Hofstede (2001); a snapshot of the determinants of entrepreneurship in Madagascar's rural areas, which constitute enclaves of ethnic groups, was sought.

To survive and to face the current growing poverty, the Malagasy people compete with entrepreneurial ingenuity. In fact, as the majority of the Malagasy population live in rural areas and most of them recognise themselves as farmers; it could be assumed that the households, which have non-agricultural enterprises or agricultural wage-earning enterprises, are entrepreneurs. Thus, the owning rate of a non-agricultural enterprise or an agricultural wage-earning enterprise could be considered a proxy of the entrepreneurial dynamics in Madagascar's rural areas.

It is worth noting that according to the definition adopted during the 2010 Household Permanent Survey in Madagascar, the "non-agricultural enterprises" are production units which exert processing and manufacture, trade, and service, are managed by particular households, and whose the production function is strongly related to the consumption function of the owner household (Instat, 2011).

In addition, the individuals who exert salaried employment and do not have direct employers are considered and classified as non-agricultural enterprise managers delivering agricultural services (ploughing, weeding, harvesting) and their service enterprises are called "agricultural wage-earning enterprises". Based on the results (Table B-1), it has been revealed by the Household Permanent Survey of 2010 (Instat, 2011) that in Madagascar, individuals living in some regions have more entrepreneurial spirit than others. Thus, the need is to know if it is empirically the case. In other words, underpinned by cultural dimensions, does an ethnic group have a certain entrepreneurial ascent on another one?

Indeed, as the core system of particular values to a specific community, the culture profiles certain personality traits and stimulates people of this community to initiate behaviours, which may not have the same extent in other communities. New venture creation or self-employment initiative may be one of these behaviours that fluctuate through communities due to the differences in cultural values and beliefs.

Noticeably, many factors supporting entrepreneurial behaviour are shared by many cultures such as the economic incentives, which are a considerable catalyst for entrepreneurial initiatives, thus entrepreneurial intention. Nevertheless, since culture underpins certain personal characteristics and penalises others, as is the case of cultural dimensions, it would not be surprising to see that certain cultures present entrepreneurial predispositions more noticeable than others (Mueller & Thomas, 2001).

1.3 Problem statement

1.3.1 Main problem

Compare the main Malagasy ethnic groups in terms of measures of cultural dimensions and perceived desirability with respect to entrepreneurship, and examine the effects of this perceived desirability on the relations between cultural dimensions and entrepreneurial intention.

1.3.2 Sub-problem 1

The first sub problem is to compare the measures of cultural dimensions of the main Malagasy ethnic groups.

1.3.3 Sub-problem 2

The second sub problem is to compare the levels of perceived desirability with respect to entrepreneurship of the main Malagasy ethnic groups.

1.3.4 Sub-problem 3

The third sub problem is to assess the moderation effects of the perceived desirability on the relationships between cultural dimensions and entrepreneurial intention among Malagasy main ethnic groups living in rural areas.

It is worthwhile to note that, in the framework of the research, the perceived desirability is related to the creation of new ventures.

1.4 Significance of the research

This investigation revealed that in the field of entrepreneurship, the following were studies on Madagascar during the last decade:

- Rasolofoson (2001), worked on the logical cultural of entrepreneurial behaviour in Madagascar;
- Razafindrazaka and de la Durantaye (2008), in examining the context of Madagascar, sought to find out how does the interaction of local entrepreneurs and the areas influence territorial dynamics;
- Rasolonoromalaza (2011), in basing his work on Madagascar's free zone entrepreneurs, determined entrepreneur's behaviour through intercultural management;
- Nordman and Vaillant (2012a) highlighted, among informal entrepreneurs, the magnitude of the gender performance gap and investigated the role of sharing norms and gender-differentiated allocation of time within the household and estimated the effect on female and male entrepreneurs technical inefficiency;
- Nordman and Vaillant (2012b), studied the performance and returns to production factors of female informal entrepreneurs in Antananarivo, the main city of Madagascar; and
- Andrianirina (2013), considering the agribusiness sector in three regions of Madagascar, based his study on entrepreneurial culture in economics and socio-cultural context with a focus on the relationship between entrepreneurial culture, the entrepreneur and performance;

Based on this observation, it could be advanced that no in-depth study on cultural dimensions and entrepreneurship has been conducted in Madagascar, as a tool to guide scholars. Thus, this research appears to be a pioneer in the matter.

Furthermore, the emphasis placed on the investigation of the interrelationships between cultural dimensions and entrepreneurial intention in the rural areas of Madagascar, where most of the population of the island live, may be useful to Malagasy political decision makers in their pursuit of relevant policies and strategies for the promotion of entrepreneurship in general and self-employment in particular.

At practical level, as it is broadly acknowledged that “the key to alleviating poverty is often not the creation of jobs … but rather the encouragement of self-employment to all individuals” (Yunus, n.d. cited in SASIX, 2008, p. 3), the findings of this research can also be used by managers in charge of microfinance institutions, to better structure their policy of funding and their strategy of enterprise development capacity building. Through this they can become a powerful catalyst for local economic development as it is an effective starting point for poverty alleviation (SASIX, 2008). It is evident that micro-finance enhances the livelihood of poor people, but this impact is not universal as not all poor people are entrepreneurs. Thus, it would be more useful for micro-finance initiatives to focus on providing micro-loans to burgeoning entrepreneurs, instead of supposing that all poor people are potential entrepreneurs.

1.5 Delimitation of the research

Admittedly, the ideal would have been to be able to study all 18 ethnic groups of Madagascar. However, due to the practicality of conducting the research under good conditions while maintaining scientific rigour, the main ethnic groups from the rural areas of the coastal regions, the rural areas of the highland regions and the rural areas of the intermediary regions were the focus of the study and thus a total of six ethnic groups were studied.

1.6 Assumptions

The following assumptions have been made with regard to this research:

- Madagascar's rural areas are mainly ethnic enclaves;
- For each region of Madagascar, the distribution of the population by gender and by level of education, as per the finding of the Household Permanent Survey of 2010 (Instat, 2011), can be applied throughout the administrative pyramid (district, commune, *fokontany* [village]) of the region;
- The respondents are able to understand and answer the questions to the best of their ability;
- The respondents are not offended by the questions related to their belonging to an ethnic group;
- The respondents give a high response rate;
- The relevant official authorities at all levels of the administrative pyramid give permission to administer a survey with a question related to belonging to an ethnic group; and
- The sample respondents are representative of their ethnic groups so that the results of the comparisons of the study represent valid ethnic differences.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The connection between culture and entrepreneurship used to be the central theme for a number of very important researchers. However, they presumed the presence of a national culture, a concept generally vague in Africa where, in most countries, individuals identify themselves by the cultures of their ethnic groups. Thus, in-depth research on the possible relations between cultural dimensions and any other fundamental construct such as entrepreneurial intention in the context of the ethnic groups finds here its rationale.

2.2 Background discussion

After defining entrepreneurship, entrepreneurial intention and perceived desirability, this section gives the background of the theories related to cultural dimensions, ethnic groups and ethnicity as well as their relationships with regard to the outcomes of individuals possessing these characteristics in their probability to start a new venture.

2.2.1 Entrepreneurship, entrepreneurial intention and perceived desirability

The word entrepreneur is of French origin. It can be translated as “between-taker” or “go-between”. It is important to note that the definition of what it is evolved over time and in parallel with the evolution of the world’s economy. Schumpeter (1965) cited by Eroglu and Picak (2011, p. 146) defined the entrepreneur as an “individual who exploits market opportunity through technical and/or organizational innovation”, more than 30 years later, Gartner (1988, p. 26) defined entrepreneurship as “the creation of new organisations”.

Admittedly, scholars seem to present contradictory definitions of what entrepreneurship is, but it can be noticed that these definitions often contain similar elements such as opportunity recognition, innovation, organisation, creation and risk taking.

Thus, a definition that could garner most of these important elements and fit with the context of the research would be the one proposed by Hisrich and Peters (2002, p. 10) which states that:

> "Entrepreneurship is the process of creating something new with value by devoting the necessary time and effort, assuming the accompanying financial, psychological, and social risks, and receiving the resulting rewards of monetary and personal satisfaction and independence".

It should be mentioned that the importance of entrepreneurship relies on the fact that:

- It is considered an important leveraging tool for country economic development (Carree, Stel, Thurik & Wennekers, 2001; Wennekers & Thurik, 1999;);
- It catalyses job creation (Reynolds, Bygrave & Autio, 2004) which may also be a consequence of increased self-employment, a broadly recognised alternative for routing out poverty (Bogan & Darity, 2007);
- It stimulates competitiveness and triggers personal potential (European Commission, 2003); and
- It is an important method for choosing an occupation based on the inclination for independence and self-direction (Gelderen, Brand, Praag, Bodewes, Poutsma & Gils, 2008).

Entrepreneurship is both a complex phenomenon and a source of creative dimension (Ijaz, Yasin & Zafar, 2012). Consequently, two components have to be considered when dealing with entrepreneurial process (Ijaz et al., 2012):

[1] An event, which has to be understood as the carrying out of an endeavour (ideas, product or services); and

[2] An agent embodied by the person who dutifully implements the event process. It represents also, the personal characteristic specific to an entrepreneur in contrast to a non-entrepreneur. It should be noted that this later has an important influence on entrepreneurial behaviour.

Entrepreneurial Intention is understood as "a conscious awareness and conviction by an individual that they intend to set up a new business venture and plan to do so in the future" (Liñán, Nabi & Krueger, 2013, p. 77). Accordingly, initiating a new venture implies the existence of a preceding cognitive representation of the actions to be implemented (Fini, Grimaldi, Marzocchi & Sobrero, 2009). Indeed, inspiration is at the starting point of an entrepreneurial idea. However, in order for it to be perceptible, intention is required (Del Mar & Shane, 2003). In fact, individuals do not decide to run a new venture spontaneously but voluntarily with conscious intentionality (Krueger, Reilly & Carsrud, 2000). Thus, formulated in another way, the entrepreneurial intention refers to the state of mind which directs the attention of a person towards a specific goal in order to carry out an endeavour. It is worth noting that identified as a sole prevailing predictor of entrepreneurial behaviour (Autio, Keeley, Klofsten, Parker & Hay, 2001), intention noticeably constitutes a remarkable dependent variable (Thompson, 2009).

The understanding of any triggering factors of entrepreneurial intention is at the heart of the scholars' quest. In so doing, some intention-based models have been developed (Liñán, 2004). These models were developed to be used as a tool for scrutinizing predictors for entrepreneurial initiatives (Krueger et al., 2000).

During the last two decades, many models have been developed (Guerrero, Rialp & Urbano, 2008; Singh & Prasad, 2012): Entrepreneurial Event Model (EEM) (Shapero & Sokol, 1982), Theory of Planned Behaviour (TPB) (Ajzen 1991), Krueger and Brazeal's (1994) Entrepreneurial Potential Model (EPM), Entrepreneurial Attitude Orientation Model (EAOM) (Robinson, Stimpson, Huefner & Hunt, 1991), the Entrepreneurial Potential Model and the Davidsson Model (Davidsson, 1995).

It should be noted that, these different models are basically inspired from two main models which are: the Entrepreneurial Event Model and the Theory of Planned Behaviour (Singh & Prasad, 2012).

The Entrepreneurial even model (EEM) is based on Shapero's (1975) construct of entrepreneurial events, which explained the link between the intention to start a business, the credibility of alternative behaviours and the propensity to act upon opportunities. The EEM is essentially an intention-based model shaped with the entrepreneurial domain in mind (Singh & Prasad, 2012).

The model considers setting up of a venture as an event that can be explained as the interaction between initiatives, abilities, management, relative autonomy and risk (Guerrero et al., 2008). Tested empirically and refined by Krueger (1993), the EEM was renamed Shapero-Krueger model and is supported by three constructs as fundamental pillars: perceived desirability, perceived feasibility, and propensity to act.

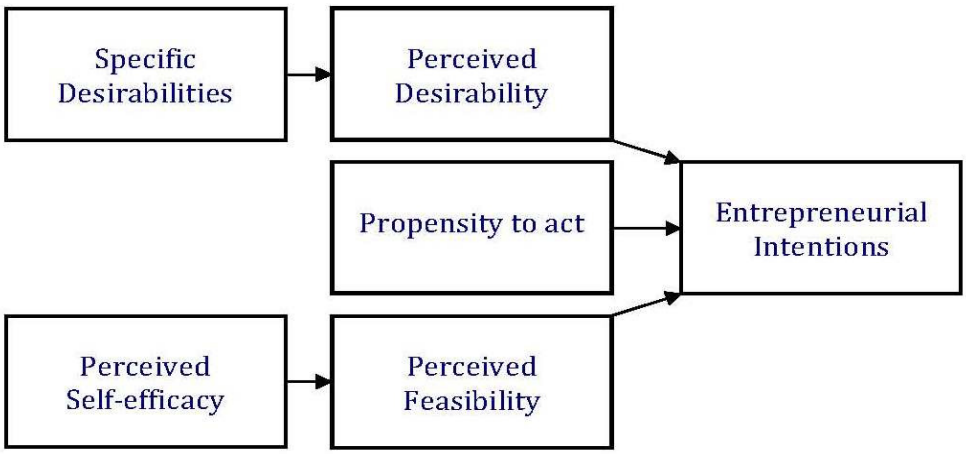

Figure 5: The Shapero-Krueger model
(Krueger, et al., 2000)

Entrepreneurial intention has a psychological dimension (Krueger et al., 2000). Scholars in psychology demonstrated at length that intention is the best predictive factors of any planned behaviour, in particular when the behaviour is rare, hard to observe, or implies unforeseeable times (Krueger et al., 2000). Insofar as the new ventures are not created in a day, entrepreneurship could be observed as a kind of planned behaviour. In addition, to understand the behaviour of individual entrepreneurs, Ajzen (1991) came up with the theory of planned behaviour (TPB).

The TPB is a facilitating tool for understanding the way in which behaviour of individual entrepreneurs could be changed. Three factors are crucial in changing the intention and the actual behaviour: the belief and attitude somebody has towards the behaviour (Attitude towards the act); the subjective norm, which refers to the social pressure from the environment on the individual and the perceived behavioural control (perceived feasibility).

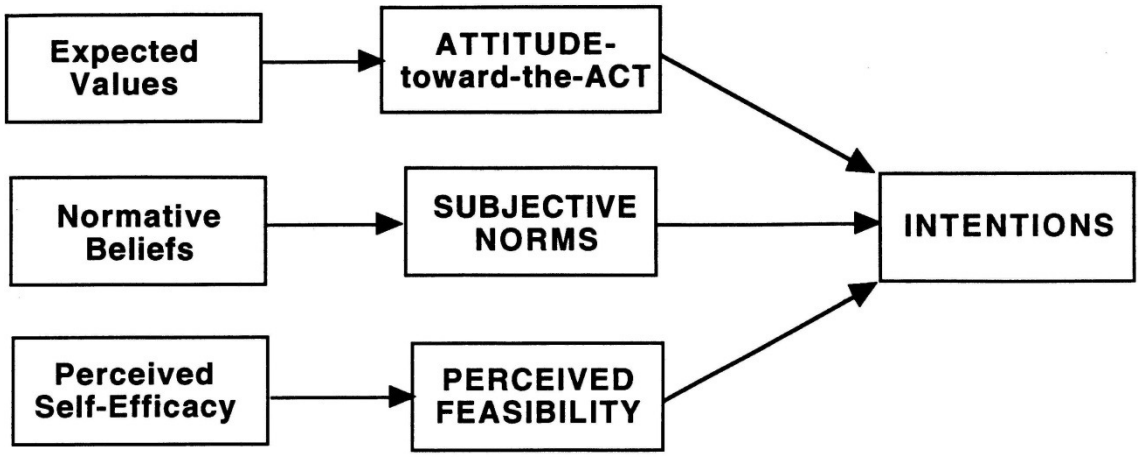

Figure 6: Ajzen's theory of planned behaviour
(Krueger, et al., 2000)

These brief overviews show that the two models (TPB and SEE) are very important in explaining human behaviour.

However, it is worth noting that the entrepreneurial intention is acknowledged as the most intriguing and the most elusive when referring to economic analysis (Baumol, 1968). Urban, Van Vuuren and Owen (2008) underlined that by stressing the intersection between the TPB and the SEE models, it has been demonstrated that perceived credibility (perceived feasibility), perceived desirability and propensity to act are explaining more than half of the variance in intention toward entrepreneurship as per the findings of Krueger (1993). Fitzsimmons and Douglas (2011 has highlighted a positive relationship between entrepreneurial intention, perceived feasibility and perceived desirability. Notwithstanding the fact that entrepreneurial intention does not necessitate both perceived feasibility and perceived desirability to be at a high level (Fitzsimmons & Douglas, 2011).

Within the context of the research, the focus will be on the perceived desirability, which can be understood as the extent to what the idea of creating a new venture is attractive.

Discovering all the precursors of entrepreneurial intention, and their role in triggering the entrepreneurial behaviour is not easy and still requires further research such as deepening the relationships between the construct of entrepreneurial intention and those of cultural dimensions.

2.2.2 Cultural dimension theory

As mentioned, culture refers to the collective programing of the mind in a patterned way, which differs from one community to another (Hofstede et al., 2010). It consists of patterns, values, ideas and symbolic features, which shape the human behaviour and are transmitted throughout generations (Ijaz et al., 2012).

One of the first theories that allowed quantification and explanation of observed differences between cultures, was the cultural dimension theory, developed to describe the effects of a society's culture on the values of its members and how these values relate to behaviour, using a structure derived from factor analysis (Hofstede, 1980, 2001; Hofstede et al., 2010).

The cultural dimension theory is based on the idea according to which the value can be placed on six dimensions of cultures:

[1] The *power distance (PD) dimension*, which consists of the acceptance and the expectation by/from the members of an organisation, institution or community who have less power, of the fact that the power is distributed in an unequal manner. This dimension does not measure the level of distribution of the power in a given culture, but analyses the people's related feelings. A low score of the power distance indicates that a culture expects and accepts that relations between them are democratic and its members are perceived as equal. A high score means that community members who have less power accept their condition and recognise the existence of hierarchical relationships in the organisation of the community (Hofstede, 1980, 2001; Hofstede et al., 2010).

[2] The *individualism versus collectivism (IC) dimension,* refers to the degree by which the individuals are integrated into their groups. In collectivist setting, the objectives of the group and its wellbeing have more value than those of the individual. The individualistic cultures give importance to the realisation of the personal objectives. Moreover, the individual evolves within two groups: the in-group and the out-group. The in-group which is the main cradle of individual identity and stability, made up by close family and friends. Other people in relation to an individual one could be considered to belong to his or her out-groups. (Hofstede, 1980, 2001; Hofstede et al., 2010).

[3] The *uncertainty avoidance (UA) dimension*, which deals with the tolerance of a community for uncertainty and ambiguity, measures the way in which a community manages unknown situations, unexpected events and anxiety vis-a-vis the change. The cultures, which have high uncertainty avoidance are less tolerant to change and tend to minimize the anxiety of the unknown by setting up rigid rules, regulations and/or laws. The communities where this index is low are open to change, have less rules and laws, and have more flexible guidelines (Hofstede, 1980, 2001; Hofstede et al., 2010).

[4] The *masculinity versus femininity (MF) dimension,* is related to the distribution of the emotional roles between genders. It measures the level of significance that a culture attaches to the stereotypical male values such as insurance, ambition, power and materialism, as with the stereotypical female values such as the emphasis placed on human relationships. The cultures whose score is high on the scale of the masculinity generally presents more obvious differences between genders and tends to be more competitive and ambitious. The one whose score is low presents fewer differences between genders and grants more value to construction of relationships (Hofstede, 1980, 2001; Hofstede et al., 2010).

[5] The *long-term versus short-term orientation (LSO) dimension,* describes the temporal horizon of a community. Short-term oriented cultures give value to the traditional methods, take a considerable time to create relationships and, in general, perceive time to be circular. This means the past and the present are inter-connected and that what cannot be done today can be tomorrow. The opposite is true for the long-term orientation, which perceives time to be linear and looks to the future rather than the present or the past. Such a community pursues goals and gives value to rewards. Linked with uncertainty avoidance dimension, short-term oriented cultures also demonstrate a bold sense of right and wrong and embrace those beliefs to be absolute. In contrary, long-term oriented cultures show display a pragmatic thinking and flexible principles, adjustable to the context (Hofstede, 1980, 2001; Hofstede et al., 2010).

[6] The *indulgence versus restraint (IR) dimension,* measures the capacity of a community to satisfy their immediate needs and the personal desires of its members. Cultures that value moderation have strict social rules and standards under which the satisfying of the impulses are controlled and discouraged (Hofstede et al., 2010).

Through the analysis of national-level cultural values in more than 50 countries, Hofstede (1980, 2001) and Hofstede et al. (2010) came up with the most influential instrument of measuring cultural dimensions. The related metric is widely accepted and applied at country level as well as individual level in cross-cultural studies.

Yoo, Donthu and Lenartowicz (2011) acknowledged that the cultural dimensions considered in the metric are focused on major conceptualisation of culture developed throughout decades. These cultural dimensions were developed on an empirical basis and found to be the most important typology of culture.

Hofstede's (1980, 2001) work faced its share of pros and cons despite being widely recognised in the field of culture research. On the positive, scholars agreed on the relevance, the rigor and the relative accuracy of the study (Søndergaard, 1994), contrarily some scholars pointed to the issue of relevancy as argued that the measurement of cultural disparity is not adequately measured by a survey (Schwartz, 1999). The cultural homogeneity assumed by Hofstede's (1980, 2001) study has been also criticized (Nasif, Al-Daeaj, Ebrahimi & Thibodeaux, 1991; Redpath, 1997) as well as the ignorance of community importance and the variations of its influences (Dorfman & Howell, 1988; Lindell & Arvonen 1996; Smith 1998). The 'one company' approach is another issue raised by scholars, as it is very difficult to support the notion that the company surveyed could provide information on the entire cultural system of the country (Graves, 1986; Olie, 1995; Søndergaard, 1994). Some scholars stressed the issue of statistical integrity related to the likelihood of sample error (Dorfman & Howell 1988; Furrer, Liu & Sudharshan, 2000).

However, in the field of entrepreneurship and considering the context of a country or a community, it should be underlined that culture might influence entrepreneurship two ways (Liñán, et al., 2012):

[1] The bottom-up method, which is the case of a country or a community having more individuals with entrepreneurial values and traits, thus more individuals will become entrepreneurs. In sum, values are aggregated. The more you have, the more you get.
[2] The top-down method underpinned by the existence of a higher level of moral endorsement or tangible support toward entrepreneurship activities in the country or community practices.

Accordingly, whatever the dominant means in a country or a community, trying to understand the courses of intention development, commend to an in-depth examination of any factors that serve as anchoring assumptions for entrepreneurial initiatives. In so doing, cultural dimensions appear to be a key source of those deep anchoring factors.

2.2.3 Concepts of Ethnic group and Ethnic identity

The *concept of ethnic groups* refers to a community that is identified by a common culture or to descendants of the members of this community who do not adhere to this culture but who admits belonging to this ancestral group (Isajiw, 1992).

Two dimensions have to be considered when dealing with the concept of ethnic groups. On the one hand, the objective dimensions take into consideration the existence of community institutions, the centrality of having descendants and ancestors in the cultural transmission and identity construction and the fact that there are accepted codes in the form of customs, rituals and preconceptions that shape cultural behaviour. On the other hand, the subjective dimension is related to what has been known as ethnic boundaries (internal and external). The internal boundaries refer to the area of self-inclusion in the group, overlap with the process of self-identity as well as connection with the feelings of sympathy and loyalty toward members of the group. The external boundaries concern the edge of exclusion of membership; it is the delimitation of the space of those who are strangers to the group (Isajiw, 1992).

In fact, the presence of internal boundaries will lead undoubtedly to the emergence of external boundaries in a multi-ethnic setting where interaction and competition give rhythm to the life of different ethnic group members. Actually, even individuals do not adhere anymore to the culture of an ethnic group; they will be recognised as belonging to the concerned ethnic group as long as their filiation to this group can be proven. It is worth to note also that self-identification is generally triggered by the way in which others identify an individual and consequently a new form of social organisation may arise (Isajiw, 1992).

The *concept of ethnic identity* is related to the manner in which “persons, on account of their ethnic origin, locate themselves psychologically in relation to one or more social systems, and in which they perceive others as locating them in relation to those systems” (Isajiw, 1992, p. 8).

Here also, two aspects have to be considered. First, the external aspects, which concern discernible cultural and social behaviours (e.g. speaking an ethnic language, practising ethnic traditions; participation in ethnic personal networks; participation in ethnic institutional organisations, participation in ethnic voluntary associations, and participation in functions sponsored by ethnic organisations). Second, the internal aspects of ethnic identity which is related to images, self-image and image of one's group, ideas, attitudes, and feelings, and group obligations, attachment to the group (Isajiw, 1992).

Thus, within the framework of the research, it can be suggested that to some extent, belonging to an ethnic group, underpinned by its ethnic identity, may influence the entrepreneurial intention of an individual in the rural areas of Madagascar as they are mostly ethnic enclaves.

2.3 Cultural dimensions by main ethnic group in Madagascar's rural areas

2.3.1 Malagasy main ethnic groups and cultural dimensions

The people of Madagascar, known as Malagasy, result from successive immigrations beginning in the fifth century BC. The first discoverers of the island were seafarers from the south of Borneo. They brought to the island many plants from South East Asia, like rice, bananas, coconuts, yams, sugar cane and more. They controlled the metallurgy, including that of iron, and the weaving of silk (Couleurs du Monde, n.d.). Many years later, Semites and Arabs developed navigation and the trade in the Indian Ocean, supplanted the Indonesians and create many counters on the northwestern and northeastern coast of the island. From these counters, the island exported iron, a little gold, rice, wood of mangrove (for construction in Arabia), and received, from China and India, spices, pearls and ceramics. The slave trade on the east coast of Africa gave rise to African immigration along the west coast and the northwest of the island (Couleurs du Monde, n.d.).

Consequently, disseminated all over the territory, the Malagasy people are divided into 18 ethnic groups, which can be classified into three main ethnic groups: the coastal group, the highlander group and the intermediary group.

Table 1: The main ethnic groups

Coastal Group	Highlander Group	Intermediary Group
Antankarana Betsimisaraka Sakalava Vezo Mahafaly Antanosy Antandroy Antambahoaka Antaimoro Antaifasy Antaisaka	Merina Betsileo	Tsimihety Sihanaka Bezanozano Bara Tanala

Of distinct origin, it is supposed that each one of those Malagasy ethnic groups has a very singular identity (Tehindrazanarivelo, 2002). In fact, Tehindrazanarivelo (2002) argued that with 18 ethnic groups, the ethnic question is a central phenomenon in Madagascar national reality. Furthermore, the ethnic conscience exists in such a way that it would be difficult to disregard it. An ethnic group constitutes a significant unit as long as there exists a noticeable variance in behaviour and an ethnic group has to be understood as a population that shares fundamental cultural values and makes up a field of communication and interaction (Barth, 1969). Thus, it is of no surprise to note that, in spite of the supposed differences, all the Malagasy ethnic groups are regarded as Malagasy and even if they have each one their own dialect, Malagasy remains the common language (Mada-id, 2008).

Broadly speaking, Hofstede (2001) cited by Urban (2004) conceded, when coming up with the national culture as his analysis unit, that this does not guarantee generalisations, as sub-cultures based on region, social class, occupation, religion, age and gender exist. Interestingly, those sub-cultures may have been forged within a relatively homogenous group in terms of history or

geography, which experienced events that have influenced the values of the group (Urban, 2004). In the context of Madagascar's rural areas, this homogeneous group can be assimilated with an ethnic group.

Ethnic groups can produce differences in cultural dimensions, which refer to the effects of the culture of a community on the values of its members and the way in which these values are linked to behaviour (Hofstede, 1980, 2001; Hofstede et al., 2010) and even to intention.

2.3.2 Hypothesis 1

There is a difference in the measures of cultural dimensions among the main ethnic groups in Madagascar's rural areas. This hypothesis is detailed as follows:

H1a: There is a difference in the measure of power distance (PD) dimension among the main ethnic groups in Madagascar's rural areas.

H1b: There is a difference in the measure of individualism versus collectivism (IC) dimension among the main ethnic groups in Madagascar's rural areas.

H1c: There is a difference in the measure of uncertainty avoidance (UA) dimension among the main ethnic groups in Madagascar's rural areas.

H1d: There is a difference in the measure of masculinity versus femininity (MF) dimension among the main ethnic groups in Madagascar's rural areas.

H1e: There is a difference in the measure of long-term versus short-term orientation (LSO) dimension among the main ethnic groups in Madagascar's rural areas.

H1f: There is a difference in the measure of indulgence versus restraint (IR) dimension among the main ethnic groups in Madagascar's rural areas.

2.4 Perceived desirability by main ethnic group in Madagascar's rural areas

2.4.1 Malagasy main ethnic groups and perceived desirability

Comparing individuals and studying culture refers to a comparison of society (Urban, 2004). After seeking to understand cultural differences among main ethnic groups in Madagascar, it is interesting to see to what extent there is also a difference in the level of perceived desirability among those considered to be main ethnic groups. On one hand, culture reflects particular ethnic, social, economic, ecological, and political complexities in individuals (Mitchell, Smith, Seawright & Morse, 2000) and on the other hand, individual ethnicity, forged by cultural environment (e.g. ethnic group) affects attitude and behaviour (Baskerville, 2003).

Thus, to some extent, cultural environments (ethnic groups) can trigger differences in attitude (Baskerville, 2003) as well as in entrepreneurial behaviour (Shane, 1994); however, not in perceived desirability which explains over half the variance of entrepreneurial intention?

2.4.2 Hypothesis 2

There is a difference in the level of perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

2.5 Cultural dimensions, entrepreneurial intention and perceived desirability in Madagascar's rural areas

2.5.1 Perceived desirability as a moderator of the relation between cultural dimensions and entrepreneurial intention

It cannot be stressed enough that an entrepreneur can be described as an independent, nonconformist risk-taker who aligns people and necessary resources in order to set up new business ventures. To achieve this, it is paramount that the community in which the entrepreneur evolves have codes of

cultural values, which recognise the legitimacy of the entrepreneurial function as well as the entrepreneurial role (Russell, 2004). Hence, it is argued, that differences in value systems and cultural orientations affect entrepreneurship initiatives.

Hofstede (1980) states that culture forms people's thinking schemes, programming behavioural patterns, which are consistent with the cultural context. Furthermore, these thinking schemes, resulting from culture, can be very helpful for entrepreneurs in their quests to reduce the hesitation in the decision making process; to facilitate forecasts and predictions about outcomes and to increase the intention to start a new venture etc. (Busenitz and Lau, 1996).

In fact, scholars have noticed that culture plays an important role in shaping the personality of individuals. This is the case of Hayton, George and Zahra (2002), who recognised that cultural dimensions cannot be ignored with regard to entrepreneurship as they affect the motives, values and beliefs of individuals, and suggested that the role of culture is to change and supplement the institutional and economic contexts to influence entrepreneurship.

However, it should be noted that some perceptions and beliefs among entrepreneurs go beyond cultures and it may also happen that other beliefs and values are more culture or ethnic group specific (Urban, 2007). On the other hand, cultural dimensions are only constructs aiming to evaluate the culture shape of a community and that they do not directly predict the behaviour of each member of this community (Hofstede et al., 2010). Thus, it makes sense to consider that the influence of cultural dimensions on entrepreneurial intention is somehow triggered by factors such as perceived desirability, which is acknowledged to be one of the fundamental pillars of entrepreneurial intention (Krueger, 1993).

2.5.2 Hypothesis 3

The relationships between cultural dimensions (CD) and entrepreneurial intention (EI) are moderated by perceived desirability (PERDES) among main ethnic groups in Madagascar's rural areas. This hypothesis is detailed as follows:

H3a: The relationship between the power distance (PD) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

H3b: The relationship between the individualism versus collectivism (IC) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

H3c: The relationship between the uncertainty avoidance (UA) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

H3d: The relationship between the masculinity versus femininity (MF) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

H3e: The relationship between the long-term versus short-term orientation (LSO) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

H3f: The relationship between the indulgence versus restraint (IR) dimension and entrepreneurial intention (EI) is moderated by perceived desirability (PERDES) among the main ethnic groups in Madagascar's rural areas.

2.6 Conclusion of literature review

For an individual, the shaping of mental programming through years of socialisation within a culture has therefore, a foreseeable reaction to commonly experienced social situations or contexts. These typical forms of behaviour generate variances amid cultures that could be detected and the effect of cultural differences on social practices such as entrepreneurial intention could be predicted if the basic social values and norms (cultural dimensions) are identified (Bwisa & Ndolo, 2011). However, cultural dimensions are not enough to predict the behaviour of community members (Hofstede et al., 2010). In the quest of a better understanding, the modelling process of entrepreneurial intention, the consideration of the perceived desirability dimension in the context of ethnic groups, representative of a cultural homogeneity, appears as a must.

Thus, within the framework of the research, the model in Figure 7 is proposed:

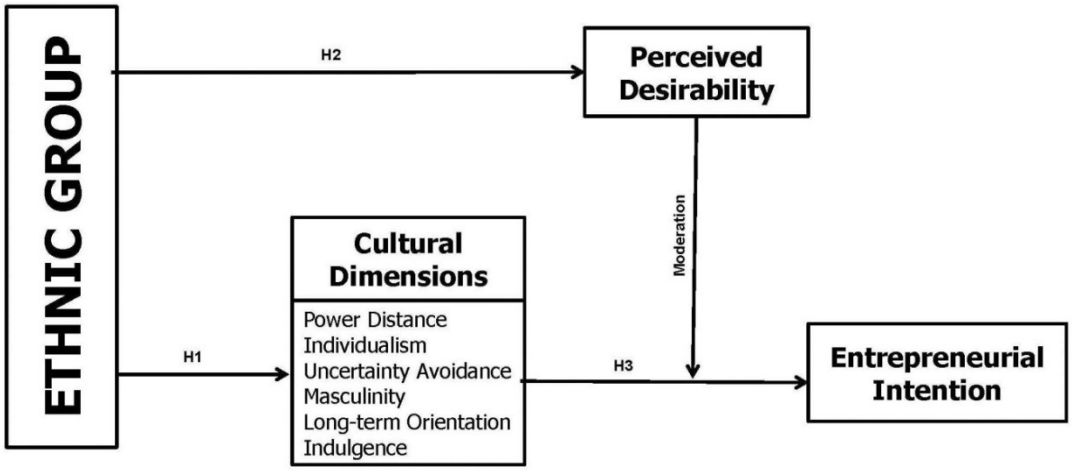

Figure 7: Proposed model for understanding the influence of cultural dimensions on entrepreneurial intention in Madagascar's rural areas

Table 2 summarises the problem and sub-problems addressed by the research as well as all considered hypotheses.

Table 2: Research problem, sub-problems and hypotheses

Problem: To compare Malagasy main ethnic groups in terms of measures of cultural dimensions and perceived desirability, and to examine the effects of perceived desirability on the relations between cultural dimensions and entrepreneurial intention	
Sub-problem	**Hypotheses**
Sub-problem 1: To compare cultural dimensions of Malagasy main ethnic groups	**H1:** There is a difference in the measures of cultural dimensions among the main ethnic groups in Madagascar's rural areas. *H1a: There is a difference in the measure of power distance dimension among the main ethnic groups in Madagascar's rural areas.* *H1b: There is a difference in the measure of individualism versus collectivism dimension among the main ethnic groups in Madagascar's rural areas.* *H1c: There is a difference in the measure of uncertainty avoidance dimension among the main ethnic groups in Madagascar's rural areas.* *H1d: There is a difference in the measure of masculinity versus femininity dimension among the main ethnic groups in Madagascar's rural areas.* *H1e: There is a difference in the measure of long-term versus short-term orientation dimension among the main ethnic groups in Madagascar's rural areas.* *H1f: There is a difference in the measure of indulgence versus restraint dimension among the main ethnic groups in Madagascar's rural areas.*
Sub-problem 2: To compare the level of perceived desirability of Malagasy main ethnic groups	**H2:** There is a difference in the level of perceived desirability among the main ethnic groups in Madagascar's rural areas.

Problem: To compare Malagasy main ethnic groups in terms of measures of cultural dimensions and perceived desirability, and to examine the effects of perceived desirability on the relations between cultural dimensions and entrepreneurial intention	
Sub-problem	**Hypotheses**
Sub-problem 3: To assess the moderation effects of the perceived desirability on the relationships between cultural dimensions and entrepreneurial intention among Malagasy main ethnic groups living in rural areas.	**H3:** The relationships between cultural dimensions and entrepreneurial intention are moderated by perceived desirability among the main ethnic groups in Madagascar's rural areas. *H3a: The relationship between the power distance dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.* *H3b: The relationship between the individualism versus collectivism dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.* *H3c: The relationship between the uncertainty avoidance dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.* *H3d: The relationship between the masculinity versus femininity dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.* *H3e: The relationship between the long-term versus short-term orientation dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.* *H3f: The relationship between the indulgence versus restraint dimension and entrepreneurial intention is moderated by perceived desirability among the main ethnic group in Madagascar's rural areas.*

CHAPTER 3: RESEARCH METHODOLOGY

This chapter describes the research methodology adopted for the implementation of this research.

3.1 Research methodology

Based on its purpose, related problems, sub-problems and all hypotheses identified and formulated, the research sought to validate evidence and to test hypotheses and theory. This implies that it was necessary to gather relevant data and analyse related statistics in order to either accept or reject the hypotheses (Veal, 1997). To do so, the use of a quantitative approach appeared to be the most appropriate.

Although some critics think that a quantitative approach may lead to the denigration of human individuality and ability to think (Walle, 1997), it is very important to underline that the quantitative researcher generally investigates impartially and does not express his/her own opinion and interpretation. To do so, measurement scales and rigorous sampling methods have to be the focus of the data collection. In fact, quantitative study is also understood as:

> "… an investigation into social or human difficulty, based on testing a theory consisting of variables, measured with numbers and analysed with statistical measures to be able to decide whether the predictive generalisations of the theory is realistic" (Creswell, 1994, cited by Engelbrecht, 2009, p. 99).

3.2 Research design

Considering resource constraints and the type of research that is correlational, the use of a non-experimental cross-sectional survey research design was recommended.

By definition, surveys make use of questionnaires or interviews for collection of data in order to be able to identify the characteristics of a given population through the use of a relevant sample from that population (Creswell, 1994).

3.3 Population and sample

3.3.1 Population

The population of the study were all adult individuals belonging to the main ethnic groups, which are the coastal group, the highlander group and the intermediary group. These groups live in rural areas and are mostly localised in the following regions:

Table 3: Localisation of the ethnic groups objects of the research

Main ethnic groups	Ethnic groups	Regions
Coastal	Antakarana, Betsimisaraka, Sakalava, Vezo, Mahafaly, Antanosy, Antandroy, Antambahoaka, Antaimoro, Antaifasy, Antaisaka	Diana, Atsinanana, Analanjirofo, Sava, Boeny, Melaky, Betsiboka, , Menabe, Melaky, Atsimo Andrefana, Atsimo Atsinanana, Vatovavy Fitovinany, Anosy, Androy
Highlander	Merina, Betsileo	Analamanga, Vakinankaratra, Bongolava, Itasy, Amoron'i Mania, Matsiatra Ambony
Intermediary	Tsimihety, Sihanaka, Bezanozano Bara, Tanala	Alaotra Mangoro, Sofia, Ihorombe, Vatovavy Fitovinany

Note: Madagascar is subdivided into 22 regions, 119 districts, 1,500 communes (municipalities) and more than 17,000 fokontany (villages).

3.3.2 Sample and sampling method

As this research is the first on this topic in Madagascar, no mean or proportion value of any of the variables are a subject of the study. However, the size of a rural commune (municipality), which is mainly an ethnic enclave and where individuals to be interviewed are located, is 10,000 inhabitants in average. Consequently, the following formula was used to determine the maximum sample size (Krejcie & Morgan, 1970):

$$s = X^2NP(1- P) \div d^2 (N -1) + X^2P(1- P)$$

Where:

s = required sample size

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (.05).

Note that, within the framework of the research, P is the proportion of the ethnic group members having low uncertainty avoidance.

After calculation, the recommended sample size was 370 for each considered ethnic group.

For practical reasons, resource constraints and considering the necessity of scientific rigor in carrying out the research, the sampling method was done following cluster sampling with quota, which comprises five stages:

[1] At the first stage, for each main ethnic group (coastal group or highlander group or intermediary group), a random selection of two ethnic groups (ethnic group sample) was done;

[2] At the second stage, each ethnic group sample was attached to probable regions of location, thus a list of region was obtained. From this list of region, a random selection of one region was done (region sample);

[3] At the third stage, for each region sample, a random selection of one district (district sample) was done;

[4] At the fourth stage, each commune in each district sample was classified as urban or rural. Then, a list of the rural commune was derived and a random selection of one rural commune (commune sample) was done;

[5] At the fifth stage, from each rural commune sample, quota sampling was done to determine the composition of the 370 people to be interviewed. In fact, to ensure the accuracy of the research, it is highly recommended that the sample used gives an exact representation of the population, in terms of gender and education level.

The sampling method was carried out in a systematic way, based on households. At the beginning of the fieldwork, the interviewers stood in the middle of the village and then visited households by applying the sampling pace determined in accordance with the population size of the village and the associated quota sheet.

The sampling process provided the following results:

Table 4: List of the ethnic groups, regions, districts and communes samples

Main ethnic groups	Ethnic groups samples	Regions samples	Districts samples	Communes Samples
Coastal	Betsimisaraka Sakalava	Atsinanana Boeny	Brickaville Mahajanga II	Ranomafana Est Ambalakida
Highlander	Merina Betsileo	Analamanga Amoron'i Mania	Manjakandriana Ambositra	Ambohibary Imerina Imady
Intermediary	Bezanozano Tsimihety	Alaotra Mangoro Sofia	Moramanga Mampikony	Belavabary Bekoratsaka

Table 5: Survey sampling

Ethnic groups samples	Sample size
Betsimisaraka	370
Sakalava	370
Merina	370
Betsileo	370
Bezanozano	370
Tsimihety	370
TOTAL	**2,220**

As for the 2010 Household Permanent Survey (Instat, 2011), the distribution of the population by gender and education level in the regions subject to research is as follows:

Table 6: Distribution of the population by gender and education level in regions focused on in the research

(Instat, 2011)

MAIN ETHNIC GROUPS	REGIONS	MASCU-LINITY RATE (%)	LEVEL OF EDUCATION (%)			
			Without education	Primary	Secondary	Tertiary
Coastal	Atsinanana	94.9	35.1	52.6	10.6	1.7
	Boeny	100.0	39.7	45.6	12.6	2.1
Highlander	Analamanga	99	15.6	60.8	16.3	7.4
	Amoron'i Mania	94.5	31.1	52.1	15.2	1.6
Inter-mediary	Alaotra Mangoro	105.4	28.4	58.2	10.6	2.8
	Sofia	89.3	42	48.5	8.4	1.2

Applying this distribution to the survey sampling, the sample in each study area (rural commune sample) was distributed by gender and education level as follows:

Table 7: Distribution of the sample by gender and level of education

GENDER	MAIN ETHNIC GROUPS	LEVEL OF EDUCATION			TOTAL
		Without education	Primary	Secondary or more	
Male	Coastal	136	180	49	365
	Highlander	85	206	73	364
	Intermediary	126	196	42	364
	Sub-total	***347***	***582***	***164***	***1093***
Female	Coastal	140	185	50	375
	Highlander	88	212	76	376
	Intermediary	133	206	37	376
	Sub-total	***361***	***603***	***163***	***1127***
	Total	**708**	**1185**	**327**	**2220**

3.4 The research instrument

The instrument used for the study was a structured questionnaire inspired by those that have been successfully tested in the framework of similar previous studies such those on:

- Power distance dimension (Yoo, Donthu, & Lenartowicz, 2011);
- Individualism versus collectivism dimension (Yoo, Donthu, & Lenartowicz, 2011);
- Uncertainty avoidance dimension (Zhao, 2010);

- Masculinity versus femininity dimension (Yoo, Donthu, & Lenartowicz, 2011);
- Long-term versus short-term orientation dimension (Yoo, Donthu, & Lenartowicz, 2011);
- Indulgence versus restraint dimension (dos Santos Góis Graça, 2011);
- Perceived desirability (Kennedy, Drenman, Renfrow & Watson, 2003); and
- Entrepreneurial intention (Liñán & Chen, 2009).

Moreover, the questionnaire was formulated and designed to be administered to rural adult individuals. The advice of Altermatt (2013) related to questionnaire and survey design is the basis of the methodological approach of the questionnaire. More specifically, it was about:

- Being focused on the construct to measure to ensure that all items created are specific to the considered construct and the questionnaire does not omit any dimension of the construct;
- Using of non-controversial language by setting up the answer to each item as simply and forthrightly as possible;
- Avoiding questions that suggest a specific answer, known as leading questions, and questions that enquire about two distinct concerns but allow merely one answer, known as double-barrelled questions.
- Offering, in a consistent manner, response options to the respondents by, for example, using a Likert scale.

It is very important to emphasise that the three phases related to the implementation of the ten scale development steps (Slavec & Drnovsek, 2012), which deal with the theoretical importance and existence of the construct, the representativeness and appropriateness of the data collection, the statistical analysis and statistical evidence of the construct respectively, were scrupulously followed.

The questionnaire comprised four parts. Apart from the first part on general information related to questions on localisation of the area and the second on demographical information, the three remaining parts were related to cultural dimensions, perceived desirability and entrepreneurial intention and made use of a five-point Likert scale to answer questions.

The cultural dimensions' part is detailed as followed:

- Power distance dimension (5 items);
- Individualism versus collectivism dimension (6 items);
- Uncertainty avoidance dimension (4 items);
- Masculinity versus femininity dimension (4 items);
- Long-term versus short-term orientation dimension (6 items); and
- Indulgence versus restraint dimension (3 items).

The perceived desirability part is composed of four items and that of entrepreneurial intention, contains six items.

To preserve the confidentiality of the respondent, no question related to the name, the address or other personal details has been asked. Furthermore, in the framework of this research, the responses are examined as group data in order to avoid any possibility of identifying an individual.

Table 8: Questionnaire overview

Scale	Item	Response categories	Scale of measurement	Categorical/ Numerical
General information	Region	Name of Region	Nominal	Categorical
	District	Name of District	Nominal	Categorical
	Commune	Name of Commune	Nominal	Categorical
Demographics	Are you Male or Female?	M/F	Nominal	Categorical
	How old are you?	Less than 20 years … 60 years and more	Ordinal	Categorical
	What ethnic group do you consider yourself to belong to?	Name of Ethnic group	Nominal	Categorical
	What level of education did you reach	Without education … Secondary and more	Ordinal	Categorical

Scale	Item	Response categories	Scale of measurement	Categorical/ Numerical
Power distance (Yoo, Donthu, and Lenartowicz, 2011)	People in higher positions should make most decisions without consulting people in lower positions.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	People in higher positions should not ask the opinions of people in lower positions too frequently.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	People in higher positions should avoid social interaction with people in lower positions.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	People in lower positions should not disagree with decisions by people in higher positions.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	People in higher positions should not delegate important tasks to people in lower positions.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
Individualism versus collectivism (Yoo, Donthu, and Lenartowicz, 2011)	Individuals should sacrifice self-interest for the group	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Individuals should stick with the group even through difficulties.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Group welfare is more important than individual rewards.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Group success is more important than individual success.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Individuals should only pursue their goals after considering the welfare of the group.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Group loyalty should be encouraged even if individual goals suffer.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
Uncertainty avoidance (Zhao, 2010)	Orderliness and consistency should be stressed, even at the expense of experimentation and innovation	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Person who leads a structured life that has few unexpected events is missing a lot of excitement	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Leaders in community should provide detailed plans concerning how to achieve goals	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
Masculinity versus femininity (Yoo, Donthu, and Lenartowicz, 2011)	It is more important for men to have a professional career than it is for women.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Men usually solve problems with logical analysis; women usually solve problems with intuition.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Solving difficult problems usually requires an active, forcible approach, which is typical of men.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	There are some jobs that a man can always do better than a woman.	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical

Scale	Item	Response categories	Scale of measurement	Categorical/ Numerical
Long-term versus short-term Orientation (Yoo, Donthu, and Lenartowicz, 2011)	Careful management of money (Thrift)	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Going on resolutely in spite of opposition (Persistence)	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Personal steadiness and stability	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Long-term planning	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Giving up today's fun for success in the future	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Working hard for success in the future	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
Indulgence versus Restraint (dos Santos Góis Graça, 2011)	Taking all things together, you are very happy over the way your life turns out	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	You have completely free choice and control over the way your life turns out	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	Leisure time is very important in your life	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
Perceived desirability (Kennedy et al., 2003)	How attractive is it for you to start your own business?	Very unattractive … Very attractive	Ordinal/Interval	Numerical
	If you started your own business, how would you feel about doing it?	Strongly hate doing it … Strongly like doing it	Ordinal/Interval	Numerical
	If you started your own business, how tense would you be?	Very tense … Very relaxed	Ordinal/Interval	Numerical
	If you started your own business, how enthusiastic would you be?	Very unenthusiastic … Very enthusiastic	Ordinal/Interval	Numerical
Entrepreneurial Intention (Liñán and Chen, 2009)	I am ready to do anything to be an entrepreneur	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	My professional goal is to become an entrepreneur	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	I will make every effort to start and run my own business	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	I am determined to create a business in the future	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	I have very seriously thought of starting a business	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical
	I have the firm intention to start a business some day	Strongly disagree … Strongly agree	Ordinal/Interval	Numerical

It is worth noting that to test the relevancy of the research instrument on the targeted population, a pilot study was conducted in the rural communes of Talatan'i Volonondry and Ambohimanga (North of Antananarivo) on a sample of 210 adult individuals. The findings of the pilot study were helpful for the refining of the research instrument.

3.5 Procedure for data collection

To carry out the data collection, three teams under the general supervision of the researcher were set up. Each team was composed of one supervisor and two interviewers and was responsible for two districts and so, two communes sample, which means that on average, 740 individuals were interviewed per team. On a voluntary basis, the questionnaire was administered directly to the respondent by the interviewer. At the end of each survey day, the supervisor proceeded to a systematic verification of all completed questionnaires. Each team remained in the surveyed commune for five days.

3.6 Data analysis and interpretation

The first point of data analysis was the data entry. Given the number of questionnaires that had to be processed, data entry operators were recruited and trained. The data entry was done in five days through Google Drive under the supervision of the researcher. Microsoft Excel was used to provide clear data.

The first step of the data analysis was the presentation of the demographics of the respondents: distribution by gender, age, ethnic group and education level.

The second step was the analysis of the scale characteristics which include the presentation of the summary statistics (means, medians, standard deviations etc.), measures of the scale reliability and the scale validity.

3.6.1 Scale reliability

Scale reliability is a test carried out in order to determine the accuracy and precision of the measurement procedure related to a considered scale (Cooper & Schindler, 2011). It has to do with the scale's internal consistency and consequently the extent to which the items within the scale could be generalised (Welman & Kruger, 2001).

In practice, the Cronbach's coefficient alpha, which measures internal consistency reliability among a group of items combined to form a single scale, is used to measure the degree to which the scale items are homogenous and reflect the same underlying constructs (Cooper & Schindler, 2011). In other words, this coefficient is a reflection of how well the different items complement each other in their measurement of different aspects of the considered scale.

Based on George and Mallery's (2003) rule of thumb, a Cronbach's coefficient alpha:

- >.90 is excellent;
- >.80 is good;
- >.70 is acceptable;
- >.60 is questionable;
- >.50 is poor; and
- <.50 is unacceptable.

For a considered scale that is composed of *n* items, three types of indicators have to be studied together when dealing with the measurement of internal consistency in order to determine the final item composition of the scale (De Vaus, 2002):

[1] The overall Cronbach's alpha which provides to what extent the internal consistency among the *n* items is;
[2] The corrected Item-Total correlation, related to each item, which assesses internally consistent the item's score is with composite scores from all other items that remain. If this correlation is weak (<.30), then that item should be removed and not used to form a composite score for the considered scale; and
[3] The Cronbach's alpha if item deleted, which gives the value of the overall Cronbach's alpha if the item in question is removed.

3.6.2 Scale validity

The scale validity test seeks to capture the suitability or meaningfulness of the measurement. In other words, it tries to find out if the instrument accurately describes the construct to be measured. To do so, it is recommended to proceed with a factor analysis, which is a set of methods aiming to understand the influence of underlying constructs on a number of studied variables. There are two main types of factor analysis, first, exploratory factor analysis (EFA) which tries to unveil the nature of the constructs influencing a collection of responses, and second the confirmatory factor analysis (CFA) which measures if a given collection of constructs is influencing responses in a foreseeable manner or not (DeCoster & Claypool, 2004).

Within the framework of the research, principle component analysis (PCA), which is a procedure strongly related to EFA, was performed in choosing a varimax rotation.

In relation to the appropriateness of factor analysis, the output is detailed as follows:

- The descriptive statistics table is very helpful in getting a tally of valid cases. In a PCA, the ratio of cases to variables should be at least five to one;
- The correlation matrix table is useful in determining the presence of substantial correlations. In a PCA, it is required that there are some correlations greater than .30 between the variables included in the analysis;
- The anti-image matrices are used for checking the sampling adequacy of individual variables. Here, the focus is put on the anti-image correlation matrix and specifically on the Kaiser-Meyer-Olkin measure of sampling adequacy (MSA), which has to be greater than .50 for each individual variable; and

- The KMO and Barlett's Test table helps in verifying the sampling adequacy for set variables. In a PCA, the MSA must be greater than .5 for the set of variables. Furthermore, the probability associated with Barlett's test of sphericity has to be less than the level of significance (p<.05) (Beaumont, 2012; DeCoster & Claypool, 2004).

In relations to the number of factors to extract, the output is detailed as follows:

- The communalities table, which presents the proportion of the variance in the original variables, accounted for in the factor solution. Ideally, the communality value for each variable should be .60 or higher;
- The total variance explained table which, by using the output from iteration 1, gives the latent root criterion for number of factors to derive (eigenvalues greater than 1.0) indicating the number of components to be extracted for the considered variable. In addition, the column related to the cumulative proportion of variance criteria allows identifying the number of components, which satisfy the criterion of explaining 60 percent or more of the total variance (Beaumont, 2012; DeCoster & Claypool, 2004).

The third step of the data analysis and interpretation phase of the research is the test of the proposed hypotheses.

3.6.3 Testing of hypotheses 1 and 2

Hypothesis 1 (H1) was formulated as follows: There is a difference in the measures of cultural dimensions among the main ethnic groups in Madagascar's rural areas. It had six sub-hypotheses related to each cultural dimension.

For hypothesis 1, the dependent variable (DV) was the measures of cultural dimensions and the independent variable (IV) was the main ethnic group.

Hypothesis 2 (H2) was formulated as follows: There is a difference in the level of perceived desirability among the main ethnic groups in Madagascar's rural areas.

For hypothesis 2, the dependent variable (DV) was the perceived desirability and the independent variable (IV) was the main ethnic group.

Based on this information, it appears that the testing of these hypotheses lead to the comparison of more than two groups. Thus, the classical t-test cannot be applied here. The solution is the use of the analysis of variance (ANOVA) which is a procedure for detecting significant differences among any number of groups with one test. As only one dependent variable exists within the framework of the hypothesis, the test procedure to be applied is called a one-way ANOVA (Meyers, Gamst & Guarino, 2006).

Within the framework of the research, the one-way ANOVA sought to derive and compare the variance between the main ethnic groups and the variability that occurs within the main ethnic groups with regard to each cultural dimension or perceived desirability.

Talking about one-way ANOVA means dealing with the ANOVA test statistic, *F* which is the ratio of the between groups variability to the within-groups variability (Meyers, et al., 2006). The decision to accept or reject a hypothesis derives from the content of the ANOVA table (produced by SPSS 21) which comprises the source of the variance, the sum of squares values for each source, the degrees of freedom for each, the mean square values, the value of *F*, the value of *p* (denoted in the tables as Sig.).

If the value of *p* is .05 or less, the result is statistically significant, which means the null hypothesis is rejected in favour of the considered hypothesis. In the contrary case, the null hypothesis is retained (Meyers, et al., 2006).

It should be underlined that, the one-way ANOVA only helps to discover if there are significant differences among more than two groups; however, it does not show which groups are significantly different from which. In the case where the results in a comparison indicate significance and the related effect size shown by the partial eta-squared [η^2_p] gives the magnitude of the this overall difference.

Therefore, to find where the difference is, a post-hoc test has to be realised (Meyers, Gamst & Guarino, 2006). The most popular post-hoc test considered is the Tukey's HSD (HSD stands for 'honestly significant difference'). Any difference between a pair of means equal to, or larger than, the calculated Tukey's HSD value indicates a statistically significant difference (Meyers, et al, 2006). Here also, if any difference exists between two means, to know how important this difference is, it is recommended to estimate the effect size adapted to mean differences that is the Cohen's *d* (Nandy, 2012). To do so, the following formula was used as this research faces a big sample and unequal group variances (Nandy, 2012):

$$d = \frac{M_1 - M_2}{S_2}$$

Where:
M_1 is the mean of the main ethnic group 1
M_2 is the mean of the main ethnic group 2
S_2 is the standard deviation of the main ethnic group 2

With regard to the interpretation of the effect size, Table 9 indicates the rule of thumb:

Table 9: Magnitude of effect summary

(Nandy, 2012)

Effect Size	Magnitude of effect		
	Small	**Medium**	**Large**
eta-squared – η^2_p	0.01	0.06	0.14
Cohen's *d*	0.20	0.50	0.80

It should be noted that the assumptions to be considered when launching a one way ANOVA, are detailed as follows (Meyers, et al., 2006):

- There can be just one independent variable;
- The independent variable data must either be in categorical form (nominal scale) to begin with, or reduced to categorical form;
- The dependent variable data must be at least interval scale;

- There are k-samples independently and randomly drawn from the source population;
- The population from which the subjects are drawn is normally distributed; and
- All k-samples are distributed similarly (homogeneity of variance).

However, if the k-samples have the same size, there is no concern about those above-mentioned warnings as the one-way ANOVA is quite robust i.e. relatively unperturbed by violations of its assumptions (Bagenda, 2009). The only change in the process to be checked scrupulously is the fulfilling or not of the homogeneity assumption.

In fact, within the framework of the research, when it appeared that the k-samples were not similarly distributed, the post-hoc test launched was the Tamhane's T2 reserved for the case of an equal variance not assumed.

As a reminder, it is worthwhile to specify that the most common test of homogeneity of variance is the Levene's test. It aims, on an interval dependent, to test the assumption that each group of one or more categorical independent variables (the main ethnic groups) has the same variance. If the significance of the Levene statistic is significant ($p<.05$), the homogeneity assumption is not fulfilled (Garson, 2012).

Thus, within the framework of the research, as there were three samples (coastal group sample, highlander group sample, intermediary group sample) drawn independently and randomly from the population of Malagasy living in rural areas and each comprising 740 adult individuals the use of a one-way ANOVA for testing the hypotheses 2 and 3 was largely justified.

3.6.4 Testing of hypothesis 3

As hypothesis 3 (H3) was about seeking the moderation effect of the perceived desirability on the relationship between each cultural dimension and the entrepreneurial intention, the recommended analysis method was a moderation analysis (Field, 2013).

Hypothesis 3 had six sub-hypotheses related to each cultural dimension. For each sub-hypothesis, the dependent variable was the entrepreneurial intention. The independent variable was the cultural dimension and the moderator variable is the perceived desirability.

Within the framework of the research, the conceptual moderation model could be schematised in Figure 8:

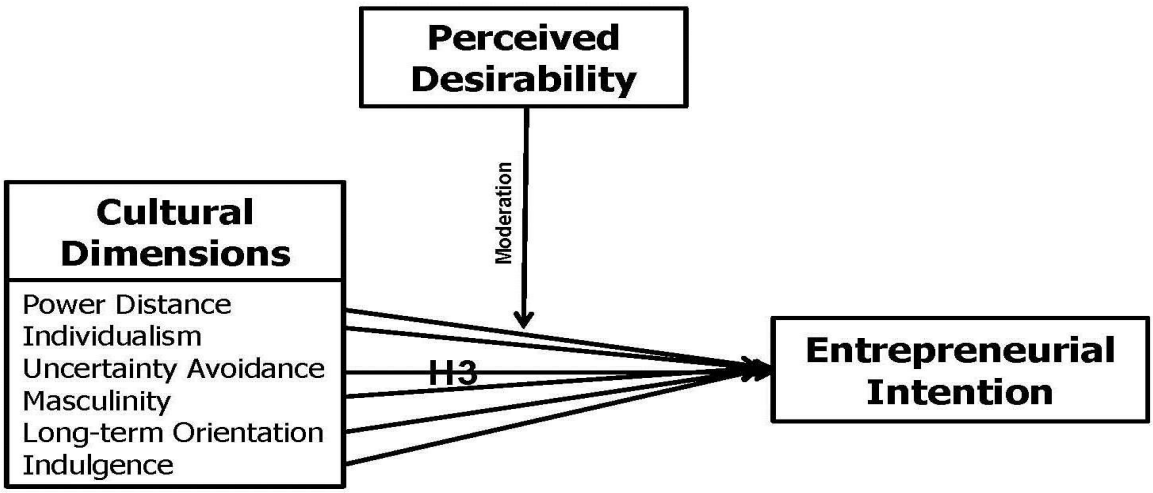

Figure 8: Conceptual moderation model for the research
(Field, 2013, p. 396)

This conceptual moderation model suggests that the direction of the relationship between the cultural dimension and the entrepreneurial intention is affected by the perceived desirability (Field, 2013).

In practice, for testing the moderation or interaction effect a hierarchical multiple regression has to be performed. Three phases have to be considered (Ho, 2009; Jose, 2013):

Phase 1 checks if a relationship exists between the entrepreneurial intention and a considered cultural dimension. In other words, it is about to verify if the entrepreneurial intention is a function of the considered cultural dimension and thus through a simple linear regression detailed as follows (Field, 2013):

$$EI = b_0 + \beta_1 CD + \varepsilon_i$$

Where:

b_0 is the intercept or constant

β_1 is the regression weight of the cultural dimension predictor of the entrepreneurial intention.

The relationship does exist if the related model is significant (p <.05) and the related R squared (R^2_1) gives information about the effect size. The most used effect size in the case of a multiple regression is the Cohen's f^2 (Nandy, 2012), which is obtained through the following formula (Cohen, 1988):

$$f^2 = \frac{R^2_{AB} - R^2_A}{1 - R^2_{AB}}$$

Where, with regard to the model 1, $R^2_{AB} = R^2_1$ and $R^2_A = 0$.

At the level of the interpretation, by convention (Nandy, 2012):

- If f^2 is equal 0.02, the effect is considered of small magnitude;
- If f^2 is equal 0.15, the effect is considered of medium magnitude; and
- If f^2 is equal .35, the effect is considered of large magnitude.

It is important to note that these values of f^2 can be translated into proportions of variance explained by dividing f^2 by (1 + f^2) (Wuensch, 2013).

Phase 2, based on the linear regression equation, aimed to understand if the introduction of the perceived desirability as a predictor of the entrepreneurial intention, seeing that the multiple regression model accounts for significantly more variance. The regression model to be considered would be (Field, 2013):

$$EI = b_0 + \beta_1 CD + \beta_2 PERDES + \varepsilon_i$$

Where:

β_1 is the regression weight of the cultural dimension predictor of the entrepreneurial intention.

β_2 is the regression weight of the perceived desirability predictor of the entrepreneurial intention.

Here also, the related R squared (R^2_2) is helpful for the determination of the effect size f^2 for which, according to the above-mentioned formulae: $R^2_{AB} = R^2_2$ and $R^2_A = R^2_1$.

Phase 3 examined the moderation effect of the perceived desirability on the relationship between the entrepreneurial intention and the considered cultural dimension. To do so, it was very important to remember that, within the framework of this multiple regression, the outcome (the entrepreneurial intention) is predicted from a predictor (the cultural dimension), the moderator (the perceived desirability) and the interaction of these variables (cultural dimension x perceived desirability) as for the following hierarchical regression scheme:

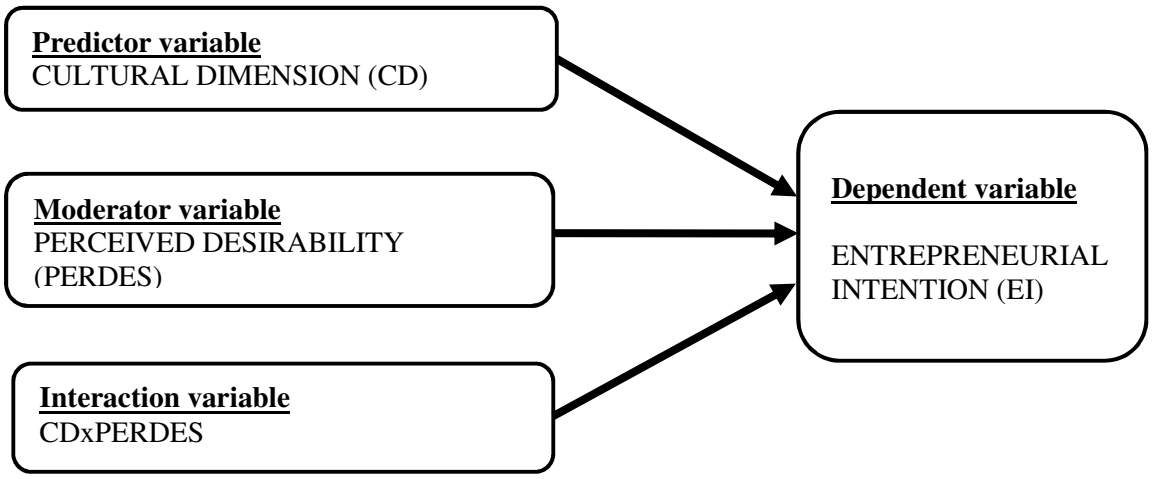

Figure 9: Hierarchical regression scheme for the testing of the hypothesis H3
(Jose, 2013)

Accordingly, the basic regression model to be used would be (Field, 2013):

$$EI = (b_0 + \beta_1 CD + \beta_2 PERDES + \beta_3 CDxPERDES) + \varepsilon_i$$

Where:

β_1 is the regression weight of the cultural dimension predictor of the entrepreneurial intention.

β_2 is the regression weight of the perceived desirability predictor of the entrepreneurial intention.

β_3 is the regression weight of the interaction between cultural dimension and perceived desirability predictor of the entrepreneurial intention.

But in order to run this regression model suitably, the centring of the predictors by using the grand mean as a pivotal point was realised as well as the creation of the interaction variable, by multiplying the centred predictor variable and the centred moderator variable together. It is important to note that the centring of the predictors is supported by the necessity of standardising all variables in order to easily interpret the results and to avoid multicollinearity (Field, 2013).

The new variable created was integrated within the data and the multiple regression with interaction (moderation analysis) launched. The output from the moderation analysis comprises (Field, 2013):

- *b*-value for each predictors with the associated standard errors;
- Each b-value is compared to zero using a *t*-test; and
- Confidence interval for the *b*-value is produced as well as the related *p*-value.

If for the interaction variable (centred cultural dimension x centred perceived desirability) the value of *p* is less than .05, it could be concluded that the perceived desirability moderates the relationship between the cultural dimension and the entrepreneurial intention. Moreover, as for moth regression equations, the related R squared (R^2_3) provides information about the effect size f^2 for which: $R^2_{AB} = R^2_3$ and $R^2_A = R^2_2$.

Finally, if a moderation effect was noticed, it was judicious to end the analysis with a simple slopes analysis in order to visualise the relationship between the cultural dimension and the entrepreneurial intention (Field, 2013). To do so, it is recommended that the nine cells means be generated for graphing. Both the measure of cultural dimension and the level of perceived desirability have to be put in a trichromatic way (high, medium and low) – *trichromatisation* - and a cross table, containing as cells the means of related level of entrepreneurial intention (EI_n), set up as per Table 10:

Table 10: Example of nine cells means of related level of entrepreneurial intention

		Cultural Dimension		
		Low	**Medium**	**High**
Perceived desirability	**Low**	EI_1	EI_2	EI_3
	Medium	EI_4	EI_5	EI_6
	High	EI_7	EI_8	EI_9

Where:

EI_1 is the mean of the level of the entrepreneurial intention of a the group characterise by a low measure of cultural dimension and a low level of perceived desirability,

EI_2 is the mean of the level of the entrepreneurial intention of the group characterise by a medium measure of cultural dimension and a low level of perceived desirability and so on.

It is worth noting that the *trichromatisation* is processed as followed, through Microsoft Excel:

- The variable (Var) is the level of perceived desirability or the measure of a considered cultural dimension;
- MVar is the mean of the variable;
- StdVar is the standard deviation of the variable;
- If variable $\leq$(Mvar - StdVar) then variable is classified LOW;
- If variable $\geq$(Mvar + StdVar) then variable is classified HIGH; and
- Else, then variable is classified MEDIUM.

It should be stressed that the abovementioned procedure followed for the testing of hypothesis 3 was reiterated for the overall sample and each main ethnic group sample.

At the level of the conclusion, the research had an ambition to ascertain the entrepreneurial profile of each main ethnic group as per Figure 10:

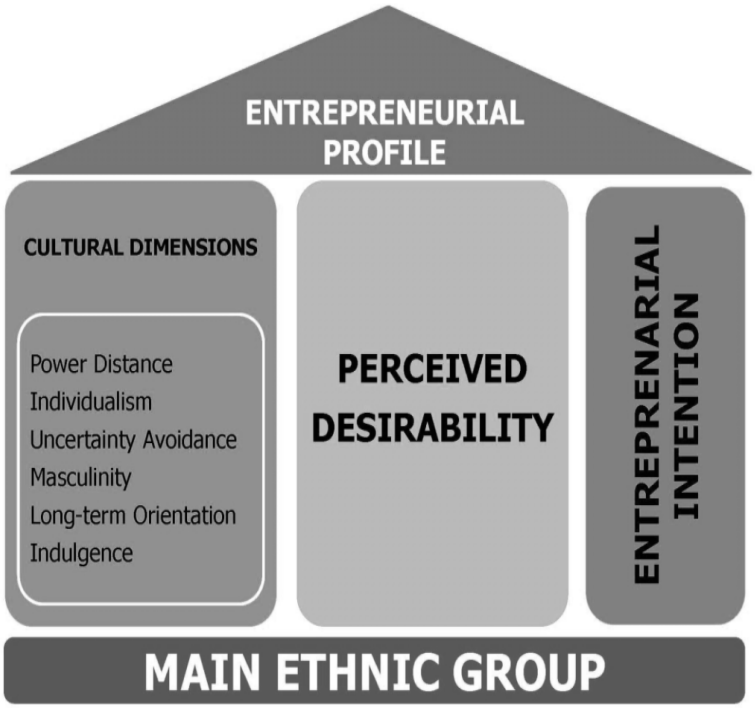

Figure 10: Main ethnic group's integrated cultural dimentions profile for entrepreneurship

For smooth presentation, the means of the levels of cultural dimensions as well as perceived desirability and entrepreneurial intention was put in a trichromatic way, based on the five-point Likert scale (high with mean>3, medium with mean =3 and low with mean<3).

3.7 Limitation of the study

The current extent of poverty in Madagascar's rural areas, which is generalised, risks ensuring that people living there are stuck at the base of the Maslow's hierarchy of needs and find themselves in a deep depression, exacerbated by a fatalistic state of mind. This kind of situation may lead to the annihilation of any self-motivation essential to the stimulation of entrepreneurial initiative, which is critical for entrepreneurial intention.

On the contrary, the need for those people to find reliable sources of income, can also lead them to want to settle on their own account as self-employed and thus to have a high level of entrepreneurial intention.

However, in this case as in any other, with regard to the sampling procedure adopted, the research results accurately reflect the entrepreneurial intention situation prevailing in Madagascar's rural areas.

3.8 Validity and reliability

The concepts of validity and reliability related to the research are explained.

3.8.1 External validity

External validity is ensured to verify whether the results of the study may be valid in other places if generalisation is necessary (Cooper & Schindler, 2011). In this case, caution should be exercised as the research involved only six of 18 ethnic groups. In addition, the sampling method chosen for reasons of practical convenience does not guarantee a good representation of the targeted ethnic groups as the rural communes of settlement of these groups are numerous. Here, only one rural commune per ethnic group was surveyed.

3.8.2 Internal validity

The internal validity of a concept helps to verify how a question related to this concept actually measures what it is supposed to (Cooper & Schindler, 2011). In this context, a coherency matrix was developed to ensure that each question efficiently addresses a concern of the research.

3.8.3 Reliability

The reliability of a research supposes that all the significant findings resulting from the research must be reproducible under the same conditions of implementation. In due time, other researchers must be able to carry out the same experiment exactly and to produce same results. This will also allow consolidation of the findings to ensure that the majority of the scientific community accepts the hypothesis (Shuttleworth, 2008).

Accordingly and with regard to the methodological approach adopted for the realisation of the study (scientific method of sampling, proven questionnaire, data-collection realised in a professional way and treatment and data analysis well-structured and very scientific), it can be stated without hesitation that the research is replicable. This for scrutinizing the influence of cultural dimensions on entrepreneurial intention among the other twelve ethnic groups living in Madagascar's rural areas.

CHAPTER 4: PRESENTATION OF THE RESULTS

The statistical analysis was processed through SPSS 21. The interpretation of any calculated statistical indexes was based on relevant theory reviewed in the previous chapter. The chapter begins with the presentation of the demographic profile of respondents followed by the scale characteristics and the results related to the testing of each hypothesis. A summary closes the chapter.

4.1 Demographic profile of respondents

4.1.1 Completeness of data

With a final sample size of 2,235 adult individuals, the response rates recorded during the data collection are very good as their values are equal or more than:

- 100 percent per main ethnic group (Coastal group: 100 percent, Highlander group: 101 percent, Intermediary group: 102 percent);
- 100 percent per gender (Male: 102 percent, Female: 100 percent); and
- 93 percent per level of education (Without education: 93 percent, Primary: 103 percent, Secondary or more: 111 percent).

Note that values greater than 100 percent are because during the data collection and the random sampling there were some areas where some difficulty to fit completely with the quota sheet was experienced. The interviewers were instructed to complete the questionnaires in accordance with the information provided by respondents in a given household. Therefore, the size of the sample, with regard to a considered demographic variable (ethnic group, gender, level of education), exceeded the predetermined one. However, this situation did not have any impact on the results of the research, as demonstrated in the reliability and the validity of the studied scales.

Table 11: Response rates recorded during the data collection

GENDER	MAIN ETHNIC GROUPS	LEVEL OF EDUCATION			TOTAL
		Without education	Primary	Secondary or more	
Male	Coastal	76%	113%	122%	100%
	Highlander	102%	98%	103%	100%
	Intermediary	104%	102%	112%	104%
	Total Male	93%	104%	111%	102%
Female	Coastal	79%	109%	114%	98%
	Highlander	102%	101%	100%	100%
	Intermediary	100%	96%	127%	100%
	Total Female	93%	101%	110%	100%
Overall	Coastal	78%	111%	118%	100%
	Highlander	102%	100%	101%	100%
	Intermediary	102%	99%	119%	102%
	Total Overall	93%	103%	110%	101%

4.1.2 Gender, main ethnic groups and level of education

Among the sample of adult individuals, 29 percent do not have any level of education, 55 percent have achieved some primary school education and only 16 percent have attained some secondary school or higher. Relatively the same proportions can be noticed with regard to the gender (male: 29 percent without, 55 percent primary, 16 percent secondary or higher; female: 30 percent without, 54 percent primary, 16 percent secondary or more). On the contrary, per main ethnic groups, it appears that there is some noticeable differences with a slight disadvantage for the intermediary group (coastal group: 29 percent without, 55 percent primary, 16 percent secondary or more; highlander group: 24 percent without, 56 percent primary, 20 percent secondary or more; intermediary group: 35 percent without, 53 percent primary, 12 percent secondary or more).

Table 12: Frequency of respondents with regard to gender, main ethnic groups and level of education

GENDER	MAIN ETHNIC GROUPS	LEVEL OF EDUCATION			TOTAL	Sample size (N)
		Without education	Primary	Secondary or more		
Male	Coastal	28%	56%	16%	100%	367
	Highlander	24%	56%	21%	100%	365
	Intermediary	35%	53%	12%	100%	378
	Total Male	29%	55%	16%	100%	1 110
Female	Coastal	30%	55%	15%	100%	369
	Highlander	24%	56%	20%	100%	379
	Intermediary	35%	52%	12%	100%	377
	Total Female	30%	54%	16%	100%	1 125
Overall	Coastal	29%	55%	16%	100%	736
	Highlander	24%	56%	20%	100%	744
	Intermediary	35%	53%	12%	100%	755
	Total Overall	29%	55%	16%	100%	2235

4.1.3 Gender, main ethnic groups and age

In average, the respondents are 40.3 years old. The respondents from the intermediary group are oldest with an age mean of 41.8 (coastal group: 39.8 years old, highlander group: 39.4 years old). Apart from the case of the highlander group, males are slightly older than females (male: 40.7 years old; female: 40 years old).

Table 13: Age means of respondents with regard to gender and main ethnic groups

GENDER	MAIN ETHNIC GROUPS			TOTAL
	Coastal	Highlander	Intermediary	
Female	39.1	39.6	41.3	40.0
Male	40.5	39.2	42.3	40.7
Overall	39.8	39.4	41.8	40.3

4.2 Scale characteristics

4.2.1 Scale reliability

The research results (Tables 15 and 16) show that the reliability of: the cultural dimensions scales are as follows

- Power distance scale is poor (five items, α = .59*)* with two items (PD4 and PD5) presenting a weak Corrected Item-Total Correlation (PD4: .22 and PD5: .09) coupled with a questionable Cronbach's Alpha if Item Deleted for the item PD4 (α = .6) and an acceptable Cronbach's Alpha if Item Deleted for the item PD5 (α = .77). Thus, it appeared that the removing of the items PD4 and PD5 was judicious in order to render the power distance scale reliable (three items, α = .97);
- Individualism versus collectivism scale is excellent (six items, α = .99*)* without any discrepancy identified at the level of the Corrected Item-Total Correlation and the Cronbach's Alpha if Item Deleted;
- Uncertainty avoidance scale is questionable (four items, α = .61*)* and characterised by two items (UA1 and UA2) having a weak Corrected Item-Total Correlation (UA1: .21 and UA2: .10). Furthermore, Cronbach's Alpha if Item Deleted is poor for the item UA1 (α = .56) and questionable for the item UA2 (α = .64). In not including those two items, the reliability of the scale becomes acceptable (two items, α = .78);
- Masculinity versus femininity scale is acceptable (4 items, α = .82*)* with a weak Corrected Item-Total Correlation (.22) and an excellent Cronbach's Alpha if Item Deleted (.90) recorded for the item MF2;
- Long-term versus short-term orientation scale is good (6 items, α = .86*)* without any discrepancy identified at the level of the Corrected Item-Total Correlation and the Cronbach's Alpha if Item Deleted; and
- Indulgence versus restraint scale is questionable (three items, α = *.61)* with a weak Corrected Item-Total Correlation (.10) and a good Cronbach's Alpha if Item Deleted (.82) recorded for the item IR2.

Table 14: Reliability indicators for cultural dimensions scales in Madagascar's rural areas

Items	Overall Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Power distance scale			
PD1: People in higher positions should make most decisions without consulting people in lower positions.	.59	.62	.43
PD2: People in higher positions should not ask the opinions of people in lower positions too frequently.		.62	.43
PD3: People in higher positions should avoid social interaction with people in lower positions.		.57	.45
PD4: People in lower positions should not disagree with decisions by people in higher positions.		.22	.60
PD5: People in higher positions should not delegate important tasks to people in lower positions.		.09	.77
Individulism versus collectivism scale			
IC1: Individuals should sacrifice self-interest for the group	.99	.97	.99
IC2: Individuals should stick with the group even through difficulties.		.98	.99
IC3: Group welfare is more important than individual rewards.		.98	.99
IC4: Group success is more important than individual success.		.98	.99
IC5: Individuals should only pursue their goals after considering the welfare of the group.		.98	.99
IC6: Group loyalty should be encouraged even if individual goals suffer.		.98	.99
Uncertainty avoidance scale			
UA1: Orderliness and consistency should be stressed, even at the expense of experimentation and innovation.	.61	.37	.56
UA2: Person who leads a structured life that has few unexpected events is missing a lot of excitement.		.28	.64
UA3: Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do		.46	.50
UA4: Leaders in community should provide detailed plans concerning how to achieve goals		.53	.45
Masculinity versus femininity scale			
MF1: It is more important for men to have a professional career than it is for women.	.82	.83	.67
MF2: Men usually solve problems with logical analysis; women usually solve problems with intuition.		.22	.90
MF3: Solving difficult problems usually requires an active, forcible approach, which is typical of men.		.75	.71
MF4: There are some jobs that a man can always do better than a woman.		.80	.68
Long-term versus short-term Orientation scale			
LSO1: Careful management of money (Thrift)	.86	.63	.84
LSO2: Going on resolutely in spite of opposition (Persistence)		.58	.85
LSO3: Personal steadiness and stability		.63	.84
LSO4: Long-term planning		.67	.83
LSO5: Giving up today's fun for success in the future		.73	.82
LSO6: Working hard for success in the future		.69	.83
Indulgence versus Restraint scale			
IR1: Taking all things together, you are very happy over the way your life turns out	.61	.57	.25
IR2: You have completely free choice and control over the way your life turns out		.69	.01
IR3: Leisure time is very important in your life		.10	.82

Table 15: Revised reliability indicators for some cultural dimensions scales in Madagascar's rural areas

Items	Overall Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Power distance scale			
PD1: People in higher positions should make most decisions without consulting people in lower positions.	.97	.97	.94
PD2: People in higher positions should not ask the opinions of people in lower positions too frequently.		.96	.94
PD3: People in higher positions should avoid social interaction with people in lower positions.		.89	.99
Uncertainty avoidance scale			
UA3: Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do	.78	.63	
UA4: Leaders in community should provide detailed plans concerning how to achieve goals		.63	
Masculinity versus femininity scale			
MF1: It is more important for men to have a professional career than it is for women.	.90	.83	.84
MF3: Solving difficult problems usually requires an active, forcible approach, which is typical of men.		.75	.91
MF4: There are some jobs that a man can always do better than a woman.		.84	.83
Indulgence versus Restraint scale			
IR1: Taking all things together, you are very happy over the way your life turns out	.818	.69	
IR2: You have completely free choice and control over the way your life turns out		.69	

The reliability of the perceived desirability scale is poor (four items, α = .57*)* underpinned by a weak Corrected Item-Total Correlation (.01) and an excellent Cronbach's Alpha if Item Deleted (.92) recorded for the item PvDr3.

Table 16: Reliability indicators for perceived desirability scale in Madagascar's rural areas

Items	Overall Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PvDr1: How attractive is it for you to start your own business?	.57	.60	.35
PvDr2: If you started your own business, how would you feel about doing it?		.63	.34
PvDr3: If you started your own business, how tense would you be?		.01	.92
PvDr4: If you started your own business, how enthusiastic would you be?		.58	.36

Table 17: Revised reliability indicators for perceived desirability scale in Madagascar's rural areas

Items	Overall Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PvDr1: How attractive is it for you to start your own business?	.92	.85	.87
PvDr2: If you started your own business, how would you feel about doing it?		.88	.85
PvDr4: If you started your own business, how enthusiastic would you be?		.78	.93

The reliability of the entrepreneurial intention scale is excellent (6 items, α = .98*)* without any discrepancy identified at the level of the Corrected Item-Total Correlation as well as at the Cronbach's Alpha if Item Deleted.

Table 18: Reliability indicators for entrepreneurial intention scale in Madagascar's rural areas

Items	Overall Cronbach's Alpha	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EI1: You are ready to do anything to be an entrepreneur	.98	.91	.99
EI2: Your professional goal is to become an entrepreneur		.93	.98
EI3: You will make every effort to start and run my own business		.96	.98
EI4: You are determined to create a business in the future		.97	.98
EI5: You have very seriously thought of starting a business		.96	.98
EI6: You have the firm intention to start a business some day		.96	.98

4.2.2 Scale validity

The validity of the cultural dimensions scales was tested. The results of the research revealed that with regard to the appropriateness of factor analysis (Tables 19 and B-3 to B-15):

- For each cultural dimension scale the ratio of cases to variables is far higher than the required five to one as it vary from 372. to 1 (individualism versus collectivism scale and long-term versus short-term orientation scale) to 745 to one (indulgence versus restraint scale);
- For each cultural dimension scale, the number of variables with a correlation coefficient greater than .30 range from one (indulgence versus restraint scale) to 15 (individualism versus collectivism scale and long-term versus short-term orientation scale);
- The items with a MSA less than .50 are the power distance scale PD5 and all items composing the indulgence versus restraint scale;
- A part from the indulgence versus restraint scale which has a overall MSA of .47 (<.5), the overall MSA of the remain cultural dimension scales range from .54 (uncertainty avoidance scale) to .91 (individualism versus collectivism scale); and
- For each cultural dimension, the probability associated with the Barlett test is < .001.

Table 19: KMO and Bartlett's Test for cultural dimension scales in Madagascar's rural areas

Power distance scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.73
Bartlett's Test of Sphericity	Approx. Chi-Square	11627.89
	df	10
	Sig.	<.001
Individualism versus collectivism scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.91
Bartlett's Test of Sphericity	Approx. Chi-Square	34574.74
	df	15
	Sig.	<.001
Uncertainty avoidance scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.54
Bartlett's Test of Sphericity	Approx. Chi-Square	1808.17
	df	6
	Sig.	.000
Masculinity versus femininity scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.72
Bartlett's Test of Sphericity	Approx. Chi-Square	4705.39
	df	6
	Sig.	<.001
Long-term versus short-term Orientation scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.74
Bartlett's Test of Sphericity	Approx. Chi-Square	7901.69
	df	15
	Sig.	<.001
Indulgence versus Restraint scale		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.47
Bartlett's Test of Sphericity	Approx. Chi-Square	1586.44
	df	3
	Sig.	<.001

The results of the research revealed that with regard to the number of factors to extract (Tables B-16 to B-31):

- On the iteration 1, the communalities for the items PD4 and somehow PD5 (power distance scale), UA1 and UA2 (uncertainty avoidance scale), MF2 (masculinity versus femininity scale) and IR3 (indulgence versus restraint scale) were respectively around .60 suggesting thus those items should be removed as the components of their related cultural dimension scale. In so doing, the value of each studied communality was more than .78.
- Two items of the power distance scale, the uncertainty avoidance scale, the long-term versus short-term orientation scale and the indulgence versus restraint scale explain respectively 81 percent, 72 percent, 76

percent and 90 percent of the total variance. The number is only one item for the individualism versus collectivism scale and the masculinity versus femininity scale with respectively 97 percent and 65 percent of the total variance explained.

To test the validity of the perceived desirability scale, the ratio of cases to variables is 558.8 to one. Three variables have a correlation coefficient greater than .30. Only the item PvDr3 has MSA less than .50 (.26). The overall MSA is of .73 (>.50) and the probability associated with the Barlett test is <.001.

Table 20: Descriptive statistics related to perceived desirability scale in Madagascar's rural areas

Items	Mean	Std. Deviation	Analysis N	Ratio of case to variables
PvDr1: How attractive is it for you to start your own business?	4.16	.46	2235	558.80 to 1
PvDr2: If you started your own business, how would you feel about doing it?	4.12	.45		
PvDr3: If you started your own business, how tense would you be?	3.60	.85		
PvDr4: If you started your own business, how enthusiastic would you be?	4.11	.46		

Table 21: Correlation matrix related to perceived desirability scale in Madagascar's rural areas

	PvDr1	PvDr2	PvDr3	PvDr4
PvDr1	1.00	.88	-.004	.76
PvDr2	.88	1.00	.01	.77
PvDr3	-.004	.009	1.00	.032
PvDr4	.76	.77	.032	1.00

Table 22: Anti-image correlation matrix related to perceived desirability scale in Madagascar's rural areas

	PvDr1	PvDr2	PvDr3	PvDr4
PvDr1	.70[a]	-.71	.03	-.20
PvDr2	-.71	.67[a]	-.01	-.39
PvDr3	.03	-.01	.26[a]	-.05
PvDr4	-.20	-.39	-.05	.86[a]

a. Measures of Sampling Adequacy(MSA)

Table 23: KMO and Bartlett's Test for perceived desirability scale in Madagascar's rural areas

Test		Score
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.73
Bartlett's Test of Sphericity	Approx. Chi-Square	5349.38
	df	6
	Sig.	<.001

In addition, on the iteration one, all item communalities are more than .60 and one item explains 65 percent of the total variance.

Table 24: Communalities of perceived desirability scale in Madagascar's rural areas

Items	Extraction
PvDr1: How attractive is it for you to start your own business?	.88
PvDr2: If you started your own business, how would you feel about doing it?	.91
PvDr3: If you started your own business, how tense would you be?	1.00
PvDr4: If you started your own business, how enthusiastic would you be?	.80

Table 25: Total Variance Explained for perceived desirability scale in Madagascar's rural areas

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.59	65	65
2	1.00	25	90
3	.29	7	97
4	.12	3	100

For the validity of the entrepreneurial intention scale, the ratio of cases to variables is 372.50 to one. Fifteen variables have a correlation coefficient greater than .30. All items have MSA more than .50. The overall MSA is of .94 (>.50) and the probability associated with the Barlett test is significant (< .001).

Table 26: Descriptive statistics related to entrepreneurial intention scale in Madagascar's rural areas

Items	Mean	Std. Deviation	Analysis N	Ratio of case to variables
EI1: You are ready to do anything to be an entrepreneur	4.08	.40	2235	372.50 to 1
EI2: Your professional goal is to become an entrepreneur	4.06	.38		
EI3: You will make every effort to start and run my own business	4.06	.37		
EI4: You are determined to create a business in the future	4.06	.37		
EI5: You have very seriously thought of starting a business	4.06	.38		
EI6: You have the firm intention to start a business some day	4.06	.37		

Table 27: Correlation matrix related to entrepreneurial intention scale in Madagascar's rural areas

	EI1	EI2	EI3	EI4	EI5	EI6
EI1	1.00	.85	.88	.90	.90	.88
EI2	.85	1.00	.92	.91	.91	.90
EI3	.88	.92	1.00	.96	.94	.95
EI4	.90	.91	.96	1.00	.95	.95
EI5	.90	.91	.94	.95	1.00	.95
EI6	.88	.90	.95	.95	.95	1.00

Table 28: Anti-image correlation matrix related to entrepreneurial intention scale in Madagascar's rural areas

	EI1	EI2	EI3	EI4	EI5	EI6
EI1	.97[a]	-.10	-.01	-.21	-.23	-.03
EI2	-.10	.97[a]	-.29	-.07	-.21	-.03
EI3	-.01	-.29	.92[a]	-.45	-.05	-.30
EI4	-.21	-.07	-.45	.93[a]	-.23	-.20
EI5	-.23	-.21	-.05	-.23	.93[a]	-.42
EI6	-.03	-.03	-.30	-.20	-.42	.93[a]

a. Measures of Sampling Adequacy(MSA)

Table 29: KMO and Bartlett's Test for entrepreneurial intention scale in Madagascar's rural areas

Test		Score
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.94
Bartlett's Test of Sphericity	Approx. Chi-Square	25222.96
	df	15
	Sig.	<.001

Finally, on the iteration one, all item communalities are more than .60 and one item explains 93 percent of the total variance.

Table 30: Communalities of entrepreneurial intention scale in Madagascar's rural areas

Items	Extraction
EI1: You are ready to do anything to be an entrepreneur	.87
EI2: Your professional goal is to become an entrepreneur	.90
EI3: You will make every effort to start and run my own business	.95
EI4: You are determined to create a business in the future	.96
EI5: You have very seriously thought of starting a business	.95
EI6: You have the firm intention to start a business some day	.95

Table 31: Total Variance Explained for entrepreneurial intention scale in Madagascar's rural areas

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.58	93	93	5.58	93	93
2	.16	2	95			
3	.12	2	97			
4	.07	1	98			
5	.05	1	99			
6	.04	1	100			

Based on these results on the reliability and the validity of scales, it could be adopted that within the framework of the research, the item composition of each scale is detailed as follows:

Table 32: Research final scales' item composition

Scale	Items
Power distance	PD1: People in higher positions should make most decisions without consulting people in lower positions.
	PD2: People in higher positions should not ask the opinions of people in lower positions too frequently.
	PD3: People in higher positions should avoid social interaction with people in lower positions.
Individualism versus collectivism (R)	IC1: Individuals should sacrifice self-interest for the group
	IC2: Individuals should stick with the group even through difficulties.
	IC3: Group welfare is more important than individual rewards.
	IC4: Group success is more important than individual success.
	IC5: Individuals should only pursue their goals after considering the welfare of the group.
	IC6: Group loyalty should be encouraged even if individual goals suffer.
Uncertainty avoidance	UA3: Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do
	UA4: Leaders in community should provide detailed plans concerning how to achieve goals
Masculinity versus femininity	MF1: It is more important for men to have a professional career than it is for women.
	MF3: Solving difficult problems usually requires an active, forcible approach, which is typical of men.
	MF4: There are some jobs that a man can always do better than a woman.
Long-term versus short-term Orientation	LSO1: Careful management of money (Thrift)
	LSO2: Going on resolutely in spite of opposition (Persistence)
	LSO3: Personal steadiness and stability
	LSO4: Long-term planning
	LSO5: Giving up today's fun for success in the future
	LSO6: Working hard for success in the future
Indulgence versus Restraint	IR1: Taking all things together, you are very happy over the way your life turns out
	IR2: You have completely free choice and control over the way your life turns out
Perceived Desirability	PvDr1: How attractive is it for you to start your own business?
	PvDr2: If you started your own business, how would you feel about doing it?
	PvDr4: If you started your own business, how enthusiastic would you be?
Entrepreneurial intention	EI1: You are ready to do anything to be an entrepreneur
	EI2: Your professional goal is to become an entrepreneur
	EI3: You will make every effort to start and run my own business
	EI4: You are determined to create a business in the future
	EI5: You have very seriously thought of starting a business
	EI6: You have the firm intention to start a business some day

Note: The scores of the individualism versus collectivism dimension's items have been reversed to fit with the philosophy of the scale underpinned by the formulation of the questions which is collectivism oriented.

4.3 Testing of hypothesis 1

H1:	There is a difference in the measures of cultural dimensions among main ethnic groups in Madagascar's rural areas.

4.3.1 Homogeneity of variance of the measures of cultural dimensions in Madagascar's rural areas

The results show that for each cultural dimension, the value of *p*, related to Levene Statistic, is less than .001 ($p < .001$) suggesting that the homogeneity assumption is not fulfilled for the level of cultural dimension in Madagascar's rural areas. Thus, the one-way ANOVA for the testing of hypothesis 1 has to be launched with a Tamhane's T2 as a Post Hoc test.

Table 33:Test of homogeneity of variance applied to cultural dimensions in Madagascar's rural areas

Cultural dimensions	Levene Statistic	Sig.
Power distance	98.47	< .001
Individualism versus collectivism	16.56	< .001
Uncertainty avoidance	17.50	< .001
Masculinity versus femininity	25.20	< .001
Long-term versus short-term Orientation	31.97	< .001
Indulgence versus Restraint	51.16	< .001

(df1 = 2, df2 = 2232)

4.3.2 One-way ANOVA applied to cultural dimensions in Madagascar's rural areas

The one-way ANOVA applied to each cultural dimension in Madagascar's rural areas reveals that for:

- The level of power distance dimension, there is a difference with a small magnitude among main ethnic groups, $F(2, 2232) = 13.97$, $p < .001$, $\eta^2_p = .01$;
- The level of individualism versus collectivism dimension, no difference is noted among main ethnic groups, $F(2, 2232) = 1.60$, $p = .20$, $\eta^2_p = .001$;

- The level of uncertainty avoidance dimension, there is no difference among main ethnic groups, $F(2, 2232) = 1.57$, $p = .21$, $\eta^2_p = .001$;
- The level of masculinity versus femininity dimension, a small effect size underpinned the difference among main ethnic groups, $F(2, 2232) = 10.25$, $p < .001$, $\eta^2_p = .01$;
- The level of long-term versus short-term orientation dimension, with a small magnitude, a difference exists among main ethnic groups, $F(2, 2232) = 17.01$, $p < .001$, $\eta^2_p = .02$; and
- The level of indulgence versus restraint dimension, there is a noticeable difference among main ethnic groups, $F(2, 2232) = 308.66$, $p < .001$, $\eta^2_p = .22$.

Table 34: One way ANOVA applied to cultural dimensions in Madagascar's rural areas

Source	df	Mean Square	F	Sig.	Partial Eta Squared
H1a: There is a difference in the measure of power distance among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	3.22	13.97	<.001	.01
Error	2232	.23			
H1b: There is a difference in the measure of individualism versus collectivism among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	.36	1.60	.20	.001
Error	2232	.23			
H1c: There is a difference in the measure of uncertainty avoidance among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	.17	1.57	.21	.001
Error	2232	.11			
H1d: There is a difference in the measure of masculinity versus femininity among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	7.56	10.25	<.001	.01
Error	2232	.74			
H1e: There is a difference in the measure of long-term versus short-term orientation among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	1.26	17.01	<.001	.02
Error	2232	.073			
H1f: There is a difference in the measure of indulgence versus restraint among main ethnic groups in Madagascar's rural areas.					
ETHNIC GROUP	2	231.17	308.66	<.001	.22
Error	2232	.75			

Post hoc tests using Tamhane's T2 applied to each cultural dimension in Madagascar's rural areas, when relevant, indicates that for:

- The level of power distance dimension, the difference is between the coastal group and the highlander group (p = .001) with an insignificant magnitude (d = 0.16) and between the intermediary group and the highlander group (p < .001) also with a small magnitude (d = 0.20);
- The level of masculinity versus femininity dimension, the difference is between the coastal group and the intermediary group (p < .001) with a small effect size (d = 0.21) and between the highlander group and intermediary group (p = .001) with a small effect size too (d = 0.20);
- The level of long-term versus short-term orientation dimension, the difference is between the coastal group and the intermediary group (p < .001) with a small magnitude (d = 0.24) and between the highlander group and the intermediary group (p < .001) also with a small magnitude (d = 0.31); and
- The level of indulgence versus restraint dimension, the difference is between coastal group and the highlander group (p < .001) with a whopper effect size (d = 1.42), between the coastal group and the intermediary group (p < .001) with a medium effect size (d = 0.58) and between the highlander group and the intermediary group (p < .001) with a medium effect size too (d = 0.70).

Table 35: Post hoc tests applied to cultural dimensions in Madagascar's rural areas (Multiple comparisons – Tamhane's T2)

(I) ETHNIC GROUP	(J) ETHNIC GROUP	Mean Difference (I-J)	Std. Error	Sig.	Cohen's *d*
H1a: There is a difference in the measure of power distance among main ethnic groups in Madagascar's rural areas.					
Coastal	Highlander	.10	.027	.001	0.16
	Intermediary	-.02	.021	.58	0.06
Highlander	Coastal	-.10	.027	.001	0.16
	Intermediary	-.12	.027	<.001	0.20
Intermediary	Coastal	.02	.021	.58	0.06
	Highlander	.12	.027	<.001	0.20
H1d: There is a difference in the measure of masculinity versus femininity among main ethnic groups in Madagascar's rural areas.					
Coastal	Highlander	-.04	.044	.76	0.04
	Intermediary	-.19	.047	<.001	0.21
Highlander	Coastal	.04	.044	.76	0.04
	Intermediary	-.15	.043	.001	0.20
Intermediary	Coastal	.19	.047	<.001	0.21
	Highlander	.15	.043	.001	0.20

(I) ETHNIC GROUP	(J) ETHNIC GROUP	Mean Difference (I-J)	Std. Error	Sig.	Cohen's *d*
H1e: There is a difference in the measure of long-term versus short-term orientation among main ethnic groups in Madagascar's rural areas.					
Coastal	Highlander	.021	.013	.28	0.08
	Intermediary	-.06	.014	<.001	0.24
Highlander	Coastal	-.021	.013	.28	0.08
	Intermediary	-.078	.015	<.001	0.31
Intermediary	Coastal	.057	.014	<.001	0.24
	Highlander	.078	.015	<.001	0.31
H1f: There is a difference in the measure of indulgence versus restraint among main ethnic groups in Madagascar's rural areas.					
Coastal	Highlander	-1.11	.043	<.001	1.42
	Intermediary	-.46	.045	<.001	0.58
Highlander	Coastal	1.11	.043	<.001	1.42
	Intermediary	.66	.047	<.001	0.70
Intermediary	Coastal	.46	.045	<.001	0.58
	Highlander	-.66	.047	<.001	0.70

4.4 Testing of hypothesis 2

H2: There is a difference in the level of perceived desirability among main ethnic groups in Madagascar's rural areas.

4.4.1 Homogeneity of variance of the level of perceived desirability in Madagascar's rural areas

With regard to the level of perceived desirability, the studied sample was not distributed similarly because the Levene Statistic (14.78) is significant ($p < .001$). Here also, the one-way ANOVA for the testing of the hypothesis 1 had to be launched with a Tamhane's T2 as a Post Hoc test.

Table 36: Test of homogeneity of variance applied to the perceived desirability in Madagascar's rural areas

Levene Statistic	df1	df2	Sig.
14.78	2	2232	<.001

4.4.2 One-way ANOVA applied to perceived desirability in Madagascar's rural areas

With a small magnitude, the level of perceived desirability is different among the main ethnic groups, $F(2, 2232) = 13.97$, $p < .001$, $\eta^2_p = .01$.

More precisely, this difference is significant between the coastal group and the intermediary group ($p = .04$) with an insignificant magnitude ($d = 0.14$) and between the highlander group and the intermediary group ($p < .001$) also with a small magnitude ($d = 0.22$).

Table 37: One way ANOVA applied to the perceived desirability in Madagascar's rural areas

Source	df	Mean Square	F	Sig.	Partial Eta Squared
ETHNIC GROUP	2	1.67	9.41	<.001	.01
Error	2232	.18			

Table 38: Post hoc tests applied to perceived desirability in Madagascar's rural areas

(I) ETHNIC GROUP	(J) ETHNIC GROUP	Mean Difference (I-J)	Std. Error	Sig.	Cohen's *d*
Coastal	Highlander	.04	.021	.16	0.09
	Intermediary	-.05	.021	.04	0.14
Highlander	Coastal	-.04	.021	.16	0.09
	Intermediary	-.09	.023	<.001	0.22
Intermediary	Coastal	.05	.021	.04	0.14
	Highlander	.09	.023	<.001	0.22

(Multiple comparisons – Tamhane's T2)

4.5 Testing of hypothesis 3

H3:	The relationships between cultural dimensions and entrepreneurial intention are moderated by perceived desirability among the main ethnic groups in Madagascar's rural areas.

The hierarchical multiple regression carried out to test hypothesis 3 unveiled that for each cultural dimension, the regression model 2 (with the cultural dimension and the perceived desirability as predictors) obtained accounts for significantly more variance than the precedent regression model 1, with the cultural dimension as the only predictor. As shown in Table 39, the variances of the entrepreneurial intention explained by the regression model 2 range from 42 percent to 57.80 percent if those explained by the regression model 1 range only from 0 percent to 3.50 percent.

This information suggests that there is potentially a moderation effect of perceived desirability on the relationship between cultural dimension and the entrepreneurial intention (See Tables 39 and 40):

4.5.1 With regard to the relationship between the power distance dimension and entrepreneurial intention

The moderation effect of perceived desirability is observed:

- Among the highlander group - $F(3, 740) = 182.67$, $p < .001$; $b_0 = 1.64$, $p < .001$; $\beta_1 = .03$, $p = .30$; $\beta_2 = .67$, $p < .001$; $\beta_3 = .08$, $p = .007$ with an insignificant effect size ($f^2 = 0.01$) indicating that the power distance dimension, the perceived desirability and the interaction variable explain 0.86 percent of the variance of the entrepreneurial intention; and
- Within the overall group - $F(3, 2231) = 770.22$, $p < .001$; $b_0 = 1.48$, $p < .001$; $\beta_1 = .01$, $p = .67$; $\beta_2 = .72$, $p < .001$; $\beta_3 = .04$, $p = .01$ with an insignificant effect size ($f^2 = 0.004$) underlining that the power distance dimension, the perceived desirability and the interaction variable explain only 0.41 percent of the variance of the entrepreneurial intention.

The slopes analysis does not confirm this observation (see Tables B-32 to B-33 and Figures B-1 to B-2):

- Among the highlander group, when the perceived desirability is medium, there is a positive relationship, even non-significant, between the power distance dimension and entrepreneurial intention and at the high value of perceived desirability, there is also a positive relationship between power distance dimension and entrepreneurial intention;
- Within the overall group, when the level of the perceived desirability is low, the power distance dimension and entrepreneurial intention is negatively related at the low value of the power distance dimension and positively related at the medium and high values of the power distance dimension. If the perceived desirability is medium, there is a non-significant negative relationship between the power distance dimension and entrepreneurial intention and at the high value of perceived desirability; there is a positive relationship between power distance dimension and entrepreneurial intention.

4.5.2 With regard to the relationship between the individualism versus collectivism dimension and entrepreneurial intention

The perceived desirability moderates with an insignificant effect size (f^2 = 0.01), the relationship between individualism versus collectivism dimension and entrepreneurial intention among the highlander group - $F(3, 740) = 188.34$, $p < .001$; $b_0 = 2.01$, $p < .001$; $\beta_1 = -.10$, $p < .001$; $\beta_2 = .63$, $p < .001$; $\beta_3 = .06$, $p = .04$. Based on the value of the effect size, it could be concluded that combined, the individualism versus collectivism dimension, the perceived desirability and the interaction variable explained only 0.53 percent of the variance of the entrepreneurial intention.

Graphic visualisation does not confirm this moderation effect as when the perceived desirability is at its medium or high value, there is a negative relationship between individualism vs. collectivism dimension and entrepreneurial intention (see Table B-34 and Figure B-3).

4.5.3 With regard to the relationship between the uncertainty avoidance dimension and entrepreneurial intention

The moderation effect of perceived desirability is detected:

- Within the highlander group - $F(3, 740) = 189.56$, $p < .001$; $b_0 = 1.30$, $p < .001$; $\beta_1 = .09$, $p = .001$; $\beta_2 = .62$, $p < .001$; $\beta_3 = -.08$, $p = .01$ with an insignificant effect size ($f^2 = 0.01$) indicating that the uncertainty avoidance dimension, the perceived desirability and the interaction variable explain only 1.05 percent of the variance of the entrepreneurial intention; and
- Among the overall group - $F(3, 2231) = 774.15$, $p < .001$; $b_0 = 1.38$, $p < .001$; $\beta_1 = .04$, $p = .01$; $\beta_2 = .71$, $p < .001$; $\beta_3 = -.05$, $p = .003$ with an insignificant effect size ($f^2 = 0.004$) specifying that the uncertainty avoidance dimension, the perceived desirability and the interaction variable explain only 0.41 percent of the variance of the entrepreneurial intention.

The slopes analysis does not confirm the moderation effect for the highlander group as when the perceived desirability is medium or high (see Table B-35 and Figure B-4). However, the moderation effect is, somewhat, confirmed for the overall group as when the level of the perceived desirability is low, the uncertainty avoidance dimension and entrepreneurial intention is positively related at the low value of the uncertainty avoidance dimension and negatively related at the medium and high values of the uncertainty dimension. If the perceived desirability is medium, there is a non-significant positive relationship between the uncertainty avoidance dimension and entrepreneurial intention and at the high value of perceived desirability, the uncertainty avoidance dimension and entrepreneurial intention is negatively related at the low value of the uncertainty avoidance dimension and positively related at the medium and high values of the uncertainty dimension (see Table B-36 and Figure B-5).

4.5.4 With regard to the relationship between the masculinity versus femininity dimension and entrepreneurial intention

The perceived desirability moderates the relationship between masculinity versus femininity dimension and entrepreneurial intention:

- Within the coastal group - $F(3, 732) = 298.23$, $p < .001$; $b_0 = 1.27$, $p < .001$; $\beta_1 = -.05$, $p = .05$; $\beta_2 = .84$, $p < .001$; $\beta_3 = -.14$, $p < .001$ with a small effect size ($f^2 = 0.02$) underlining that the masculinity versus femininity dimension, the perceived desirability and the interaction variable explain 2.17 percent of the variance of the entrepreneurial intention;
- Among the highlander group - $F(3, 740) = 183.62$, $p < .001$; $b_0 = 1.70$, $p < .001$; $\beta_1 = .05$, $p = .07$; $\beta_2 = .63$, $p < .001$; $\beta_3 = -.08$, $p = .004$ with an insignificant effect size ($f^2 = 0.01$) indicating that the masculinity versus femininity dimension, the perceived desirability and the interaction variable explain only 1.21 percent of the variance of the entrepreneurial intention;
- Among the intermediary group - $F(3, 751) = 377.47$, $p < .001$; $b_0 = 1.23$, $p < .001$; $\beta_1 = -.15$, $p < .001$; $\beta_2 = .86$, $p < .001$; $\beta_3 = -.18$, $p < .001$ with a small effect size ($f^2 = 0.06$) indicating that the masculinity versus femininity dimension, the perceived desirability and the interaction variable explain 5.45 percent of the variance of the entrepreneurial intention; and
- Within the overall group - $F(3, 2231) = 781.15$, $p < .001$; $b_0 = 1.49$, $p < .001$; $\beta_1 = -.03$, $p = .06$; $\beta_2 = .74$, $p < .001$; $\beta_3 = -.07$, $p < .001$ with an insignificant effect size ($f^2 = 0.01$) specifying that the masculinity versus femininity dimension, the perceived desirability and the interaction variable explain 1.01 percent of the variance of the entrepreneurial intention.

Graphic visualisations do not confirm those moderation effects for the coastal and highlander groups as (See Tables B-37 and B-38 and Figures B-6 and B-7):

- Among the coastal group, when the level of the perceived desirability is low, the masculinity versus femininity dimension and entrepreneurial intention is positively related at the low value of the masculinity versus femininity dimension and negatively related at the medium and high values of the masculinity versus femininity dimension. If the perceived desirability is medium, there is a non-significant positive relationship between the masculinity versus femininity dimension and entrepreneurial intention; and
- Among the highlander group, when the level of the perceived desirability is medium or high, there is a positive relationship between the masculinity versus femininity dimension and entrepreneurial intention but non-significant at the low value of the masculinity versus femininity dimension and significant at its medium and high values.

Nevertheless, for the intermediary and the overall groups, to some degree, the confirmation through the slopes analysis is detailed as follows (see Tables B-39 and B-40 and Figures B-8 and B-9):

- Among the intermediary group, when the perceived desirability is medium, there is a non-significant positive relationship between the masculinity versus femininity dimension and entrepreneurial intention and when the perceived desirability is high, there is a negative relationship between the masculinity versus femininity dimension and entrepreneurial intention; and
- Within the overall group, when the level of the perceived desirability is medium, there is a flat relationship between the masculinity versus femininity dimension and entrepreneurial intention. When the perceived desirability is high, the masculinity versus femininity dimension and entrepreneurial intention is positively related but non-significant at the low value of the masculinity versus femininity dimension and negatively

related at the medium and high values of the masculinity versus femininity dimension.

4.5.5 With regard to the relationship between the long-term versus short-term orientation dimension and entrepreneurial intention

The moderation effect of perceived desirability is observed:

- Among the highlander group - $F(3, 740) = 183.51$, $p < .001$; $b_0 = 1.61$, $p < .001$; $\beta_1 = .02$, $= .55$; $\beta_2 = .66$, $p < .001$; $\beta_3 = .10$, $p = .001$ with a small effect size ($f^2 = 0.02$) indicating that the long-term versus short-term orientation dimension, the perceived desirability and the interaction variable explain 1.55 percent of the variance of the entrepreneurial intention; and
- Within the overall group - $F(3, 2231) = 769.39$, $p < .001$; $b_0 = 1.38$, $p < .001$; $\beta_1 = .03$, $p = .10$; $\beta_2 = .71$, $p < .001$; $\beta_3 = -.04$, $p = .02$ with an insignificant effect size ($f^2 = 0.002$) underlining the long-term versus short-term orientation dimension, the perceived desirability and the interaction variable explain only 0.20 percent of the variance of the entrepreneurial intention.

The slopes analysis confirms somewhat this observation as (see Tables B-41 and B-42 and Figures B-10 and B-11):

- Among the highlander group, when the perceived desirability is low, the long-term versus short-term orientation dimension and entrepreneurial intention is positively related at the low value and negatively related at the medium and high values of the long-term versus short-term orientation dimension. If the perceived desirability is medium, there is a non-significant positive relationship between the long-term versus short-term orientation dimension and entrepreneurial intention ; and

- Within the overall group, when the level of the perceived desirability is low, long-term versus short-term orientation dimension and entrepreneurial intention is negatively related at the low value of the long-term versus short-term orientation dimension and positively related at the medium and high values of the long-term versus short-term orientation dimension. If the perceived desirability is medium, there is a non-significant negative relationship between long-term versus short-term orientation dimension and entrepreneurial intention and at the high value of perceived desirability; there is a positive relationship between long-term versus short-term orientation dimension and entrepreneurial intention.

4.5.6 With regard to the relationship between the indulgence versus restraint dimension and entrepreneurial intention

The perceived desirability moderates the relationship between the indulgence versus restraint dimension and entrepreneurial intention:

- Within the coastal group - $F(3, 732) = 316.27$, $p < .001$; $b_0 = 1.57$, $p < .001$; $\beta_1 = .05$, $p = .06$; $\beta_2 = .71$, $p < .001$; $\beta_3 = .15$, $p < .001$ with a small effect size ($f^2 = 0.05$) underlining that the indulgence versus restraint dimension, the perceived desirability and the interaction variable explain 4.60 percent of the variance of the entrepreneurial intention;
- Among the highlander group - $F(3, 740) = 180.62$, $p < .001$; $b_0 = 1.76$, $p < .001$; $\beta_1 = .004$, $p = .89$; $\beta_2 = .64$, $p < .001$; $\beta_3 = -.07$, $p = .01$ with an insignificant effect size ($f^2 = 0.01$) indicating that the indulgence versus restraint dimension, the perceived desirability and the interaction variable explain .086 percent of the variance of the entrepreneurial intention -,
- Among the intermediary group - $F(3, 751) = 389.41$, $p < .001$; $b_0 = 1.11$, $p < .001$; $\beta_1 = .09$, $p < .001$; $\beta_2 = .80$, $p < .001$; $\beta_3 = .19$, $p < .001$ with a small effect size ($f^2 = 0.09$) indicating that the indulgence versus restraint dimension, the perceived desirability and the interaction variable explain 8.43 percent of the variance of the entrepreneurial intention; and

- Within the overall group - $F(3, 2231) = 774.86$, $p < .001$; $b_0 = 1.53$, $p < .001$; $\beta_1 = -.004$, $p = .81$; $\beta_2 = .71$, $p < .001$; $\beta_3 = .06$, $p < .001$ with an insignificantl effect size ($f^2 = 0.01$) specifying that the indulgence versus restraint dimension, the perceived desirability and the interaction variable explain 0.61 percent of the variance of the entrepreneurial intention.

Graphic visualisations slightly confirm those moderation effects as (see Tables B-43 to B-46 and Figures B-12 to B-15):

- Among the coastal group, when the level of the perceived desirability is low, there is a negative relationship between the indulgence versus restraint dimension and entrepreneurial intention. If the perceived desirability is medium, there is a non-significant negative relationship between indulgence versus restraint dimension and entrepreneurial intention and at the high value of perceived desirability, there is a positive relationship between indulgence versus restraint dimension and entrepreneurial intention;
- Among the highlander group, when the level of the perceived desirability is medium, the indulgence versus restraint dimension and entrepreneurial intention is negatively related at the low value of indulgence versus restraint dimension and positively related at the medium and high value of indulgence versus restraint dimension. If the level of the perceived desirability is high, there is a positive relationship between the indulgence versus restraint dimension and the entrepreneurial intention;
- Among the intermediary group, when the perceived desirability is low, the indulgence versus restraint dimension and entrepreneurial intention is positively related at the low value of the indulgence vs. restraint dimension and negatively related at the medium and high values of the indulgence versus restraint dimension. If the perceived desirability is medium, there is a non-significant negative relationship between the indulgence versus restraint dimension and entrepreneurial intention and when the perceived desirability is high, there is a positive relationship

between the indulgence versus restraint dimension and entrepreneurial intention; and

- Within the overall group, when the level of the perceived desirability is low, there is a negative relationship between the indulgence versus restraint dimension and entrepreneurial intention. If the perceived desirability is medium, there is a non-significant negative relationship between the indulgence versus restraint dimension and entrepreneurial intention and when the perceived desirability is high, the indulgence versus restraint dimension and entrepreneurial intention is positively related at the low value of the indulgence versus restraint dimension and negatively related at the medium and high values of the indulgence versus restraint dimension

Table 39: Model summaries related to the testing of the hypothesis 3 (hierarchical regression)

Main ethnic group	Model	R square Change	ΔR^2	*Effect size* f^2	F Change	df1	df2	Sig. F Change	Percentage of variance explained
Power distance dimension									
	Model 1	0.035		0.036	26.60	1	734	0	3.50%
Coastal	Model 2	0.54	0.505	1.098	430.42	2	733	.000	52.33%
	Model 3	0.541	0.001	0.002	287.98	3	732	.000	
	Model 1	0		0.000	0.17	1	742	0.685	0%
Highlander	Model 2	0.42	0.42	0.724	267.97	2	741	.000	42%
	Model 3	0.425	0.005	0.009	182.67	3	740	.000	
	Model 1	0.025		0.026	19.31	1	753	0	2.50%
Intermediary	Model 2	0.57	0.545	1.267	498.60	2	752	.000	55.90%
	Model 3	0.57	0	0.000	332.01	3	751	.000	
	Model 1	0.007		0.007	15.12	1	2233	0	0.70%
Overall	Model 2	0.507	0.5	1.014	1149.14	2	2232	.000	50.35%
	Model 3	0.509	0.002	0.004	770.22	3	2231	.000	
Individualism versus collectivism dimension									
	Model 1			0.000	0.94	1	734	0.333	0%
Coastal	Model 2	0.544	0.544	1.193	437.85	2	733	.000	54.40%
	Model 3	0.546	0.002	0.004	293.76	3	732	.000	
	Model 1			0.000	20.71	1	742	0	0%
Highlander	Model 2	0.43	0.43	0.754	279.09	2	741	.000	43%
	Model 3	0.433	0.003	0.005	188.34	3	740	.000	
	Model 1			0.000	6.07	1	753	0.014	0%
Intermediary	Model 2	0.569	0.569	1.320	496.63	2	752	.000	56.90%
	Model 3	0.57	0.001	0.002	331.95	3	751	.000	
	Model 1			0.000	16.95	1	2233	0	0%
Overall	Model 2	0.51	0.51	1.041	1161.52	2	2232	.000	51%
	Model 3	0.511	0.001	0.002	776.01	3	2231	.000	
Uncertainty avoidance dimension									
	Model 1			0.000	2.08	1	734	0.15	0%
Coastal	Model 2	0.543	0.543	1.188	435.66	2	733	.000	54.30%
	Model 3	0.544	0.001	0.002	291.59	3	732	.000	
	Model 1			0.000	21.37	1	742	0	0%
Highlander	Model 2	0.429	0.429	0.751	278.02	2	741	000	42.90%
	Model 3	0.435	0.006	0.011	189.56	3	740	.000	
	Model 1			0.000	0.08	1	753	0.782	0%
Intermediary	Model 2	0.57	0.57	1.326	497.42	2	752	.000	57%
	Model 3	0.57	0	0.000	331.26	3	751	.000	
	Model 1			0.000	1.27	1	2233	0.259	0%
Overall	Model 2	0.508	0.508	1.033	1152.46	2	2232	.000	50.80%
	Model 3	0.51	0.002	0.004	774.15	3	2231	.000	

Main ethnic group	Model	R square Change	ΔR^2	*Effect size* f^2	F Change	df1	df2	Sig. F Change	Percentage of variance explained
Masculinity versus femininity dimension									
	Model 1			0.000	15.36	1	734	0	0%
Coastal	Model 2	0.54	0.54	1.174	430.34	2	733	.000	54%
	Model 3	0.56	0.02	0.045	298.23	3	732	.000	
	Model 1			0.000	3.72	1	742	0.054	0%
Highlander	Model 2	0.42	0.42	0.724	268.44	2	741	<.001	42%
	Model 3	0.427	0.007	0.012	183.62	3	740	<.001	
	Model 1			0.000	2.52	1	753	0.113	0%
Intermediary	Model 2	0.578	0.578	1.370	514.14	2	752	<.001	57.80%
	Model 3	0.601	0.023	0.058	377.47	3	751	<.001	
	Model 1			0.000	19.48	1	2233	<.001	0%
Overall	Model 2	0.507	0.507	1.028	1149.94	2	2232	<.001	50.70%
	Model 3	0.512	0.005	0.010	781.15	3	2231	<.001	
Long-term versus short-term orientation dimension									
	Model 1			0.000	51.81	1	734	<.001	0%
Coastal	Model 2	0.543	0.543	1.188	434.98	2	733	<.001	54.30%
	Model 3	0.543	0	0.000	289.89	3	732	<.001	
	Model 1			0.000	14.43	1	742	<.001	0.00%
Highlander	Model 2	0.418	0.418	0.718	265.75	2	741	<.001	41.80%
	Model 3	0.427	0.009	0.016	183.51	3	740	<.001	1.55%
	Model 1			0.000	34.66	1	753	<.001	0%
Intermediary	Model 2	0.569	0.569	1.320	496.23	2	752	<.001	56.90%
	Model 3	0.57	0.001	0.002	332.05	3	751	<.001	
	Model 1			0.000	101.82	1	2233	<.001	0%
Overall	Model 2	0.507	0.507	1.028	1149.40	2	2232	<.001	50.70%
	Model 3	0.508	0.001	0.002	769.39	3	2231	<.001	
Indulgence versus restraint dimension									
	Model 1			0.000	4.23	1	734	0.04	0%
Coastal	Model 2	0.543	0.543	1.188	434.89	2	733	<.001	54.30%
	Model 3	0.564	0.021	0.048	316.27	3	732	<.001	
	Model 1			0.000	3.16	1	742	0.076	0%
Highlander	Model 2	0.418	0.418	0.718	265.82	2	741	<.001	41.80%
	Model 3	0.423	0.005	0.009	180.62	3	740	<.001	
	Model 1			0.000	0.02	1	753	0.893	0%
Intermediary	Model 2	0.573	0.573	1.342	505.57	2	752	<.001	57.30%
	Model 3	0.609	0.036	0.092	389.41	3	751	<.001	
	Model 1			0.000	0.57	1	2233	0.449	0%
Overall	Model 2	0.507	0.507	1.028	1148.34	2	2232	<.001	50.70%
	Model 3	0.51	0.003	0.006	774.86	3	2231	<.001	

- *Model 1 : the predictor of the entrepreneurial intention is the Cultural Dimension (CD)*
- *Model 2 : the predictors of the entrepreneurial intention are the Cultural Dimension (CD) and the perceived desirability (PERDES)*
- *Model 3 : the predictors of the entrepreneurial intention are the Cultural Dimension (CD), the perceived desirability (PERDES) and their interaction (CD x PERDES)*

Table 40:Moderation effects of perceived desirability on the relationships between cultural dimensions and entrepreneurial intention in Madagascar's rural areas (Regression Model 3)

Main ethnic group	Cultural dimension	Main effect			Moderation effect	Main effect		Moderation effect	Effect size			Percentage of variance explained
		β values				*p* values						
		Intercept	CD[b]	PERDES[c]	CD * PERDES[d]	CD[b]	PERDES[c]	CD * PERDES[d]	R^2_{3} [e]	R^2_{2} [f]	f^2	
Coastal	Power distance dimension	1.58	-0.03	0.74	0.04	.24	<.001	.16	.541	0.54	0	0.22%
	Individualism versus collectivism dimension	1.67	-0.08	0.73	0.05	.002	<.001	.08	.546	0.544	0	0.44%
	Uncertainty avoidance dimension	1.25	0.07	0.74	-0.04	.007	<.001	.15	.544	0.543	0	0.22%
	Masculinity versus femininity dimension	1.27	-0.05	0.84	-0.14	.05	<.001	<.001	.550	0.54	0.02	2.17%
	Long-term versus short-term orientation dimension	1.33	0.05	0.72	0.02	.07	<.001	.53	.543	0.543	0	0%
	Indulgence versus restraint dimension	1.57	0.05	0.71	0.15	.06	<.001	<.001	.564	0.543	0.05	4.60%
Highlander	Power distance dimension	1.64	0.03	0.67	0.08	.30	<.001	.01	.425	0.42	0.01	0.86%
	Individualism versus collectivism dimension	2.01	0.10	0.63	0.06	<.001	<.001	.04	.433	0.43	0.01	0.53%
	Uncertainty avoidance dimension	1.30	0.09	0.62	-0.08	.001	<.001	.01	.435	0.429	0.01	1.05%
	Masculinity versus femininity dimension	1.70	0.05	0.63	-0.08	.07	<.001	.004	.427	0.42	0.01	1.21%
	Long-term versus short-term orientation dimension	1.61	0.02	0.66	-0.10	.55	<.001	.001	.427	0.418	0.02	1.55%
	Indulgence versus restraint dimension	1.76	0.004	0.64	-0.07	.89	<.001	.01	.423	0.418	0.01	0.86%
Intermediary	Power distance dimension	1.45	-0.04	0.75	0.007	.12	<.001	.79	.570	0.57	0	0%
	Individualism versus collectivism dimension	1.39	-0.02	0.75	-0.03	.47	<.001	.20	.570	0.569	0	0.23%
	Uncertainty avoidance dimension	1.48	-0.03	0.76	0.01	.24	<.001	.73	.570	0.57	0	0.00%
	Masculinity versus femininity dimension	1.23	-0.15	0.86	-0.18	<.001	<.001	<.001	.601	0.578	0.06	5.45%
	Long-term versus short-term orientation dimension	1.34	-0.003	0.77	-0.04	.90	<.001	.14	.570	0.569	0	0.23%
	Indulgence versus restraint dimension	1.11	0.09	0.80	0.19	<.001	<.001	<.001	.609	0.573	0.09	8.43%
Overall	Power distance dimension	1.48	0.01	0.72	0.04	.67	<.001	.01	.509	0.507	0	0.41%
	Individualism versus collectivism dimension	1.64	-0.06	0.71	0.03	<.001	<.001	.09	.511	0.51	0	0.20%
	Uncertainty avoidance dimension	1.38	0.04	0.71	-0.05	.01	<.001	.003	.510	0.508	0.004	0.41%
	Masculinity versus femininity dimension	1.49	-0.03	0.74	-0.07	.06	<.001	<.001	.512	0.507	0.01	1.01%
	Long-term versus short-term orientation dimension	1.38	0.03	0.71	-0.04	.10	<.001	.02	.508	0.507	0.002	0.20%
	Indulgence versus restraint dimension	1.53	-0.03	0.74	0.04	.24	<.001	<.001	.541	0.507	0.01	0.61%

a. *Dependent Variable: Entrepreneurial intention (EI)*
b. *Predictor Variable: Cultural dimension (CD)*
c. *Predictor Variable: Perceived desirability (PERDES)*
d. *Predictor Variable: Cultural dimension x Perceived desirability (CD * PERDES)*
e. *Variance accounted for by Cultural dimension (CD) and Perceived desirability (PERDES)*
f. *Variance accounted for by Cultural dimension (CD), Perceived desirability (PERDES) and the interaction variable (CD * PERDES)*

4.6 Summary

With a total sample size of 2,235 adult individuals (1,110 males and 1,125 females), comprising three sub-samples: coastal group (N = 736), highlander group (N = 744), and intermediary group (N = 755) the response rate was very good. The sample is characterised by the maturity of its members with the respondents overall group being 40.3 years on average. Furthermore, 29 percent of respondents do not have any level of education, 55 percent have attended primary school and only 16 percent have been at secondary school or more.

After the recommended adjustment operated on four scales out of eight, the reliability (all $\alpha \geq .78$) and the validity the studied scales were largely demonstrated.

Through a meticulous one-way ANOVA test coupled with Tamhane's T2 Post Hoc test, it was proved that:

- there is no difference between all three main ethnic groups studied with regard to the individualism versus collectivism dimension and the uncertainty avoidance dimension;
- a difference with an insignificant magnitude is noted between the highlander group and the coastal group with regard to the measure of the power distance dimension;
- differences with small magnitudes are noted between the highlander group and the intermediary group relative to the measure fo power distance dimension and between the intermediary group and the two others main ethnic groups (the coastal group and the highlander group) as for the measure of the masculinity versus femininity dimension and that of long-term versus short-term orientation dimension; and

- a difference with large magnitude is verified between all studied main ethnic groups with regard to the indulgence versus restraint dimension.

Considering the perceived desirability, there is a difference with a small effect size between the intermediary group and the two others main ethnic groups (coastal group and highlander group).

A multiple regression with interaction in order to highlight a hypothetical moderation effect of the perceived desirability on the relationship between cultural dimensions and entrepreneurial intention revealed that:

- A moderation effect with either insignificant or a small magnitude for all studied cultural dimensions is verified only among the highlander group;
- For the coastal group and the intermediary group, a moderation effect with a small magnitude is noted with regard to the relationship between the masculinity versus femininity dimension and the entrepreneurial intention, on one hand and the relationship between indulgence versus restraint and entrepreneurial intention, on the other hand; and
- Within the overall group, the moderation effect with an insignificant magnitude is noted for all relationships between cultural dimensions and entrepreneurial intention except that which involves the individualism versus collectivism dimension.

Table 41 consolidates the main findings for the hypotheses testing.

Table 41: Main findings for hypotheses testing

Hypothesis	Test performed	Main findings
H1: There is a difference in the measures of cultural dimensions among main ethnic groups in Madagascar's rural areas.	ANOVA coupled with Tambane's T2 Post Hoc test	*Power distance dimension* - There is no difference between coastal group and intermediary group - There are differences with small magnitudes between highlander group and the coastal group - There is a difference with the small magnitude between highlander group and intermediary group *Individualism versus collectivism dimension* - There is no difference between the three main ethnic groups *Uncertainty avoidance dimension* - There is no difference between the three main ethnic groups *Masculinity versus femininity dimension* - There is no difference between coastal group and highlander group - There are differences with small magnitudes between intermediary group and the two others remaining main ethnic groups (coastal group and highlander group) *Long-term versus short-term Orientation dimension* - There is no difference between coastal group and highlander group - There are differences with small magnitudes between intermediary group and the two others remaining main ethnic groups (coastal group and highlander group) *Indulgence versus Restraint dimension* - There is a difference with whopper magnitude between coastal group and highlander group - There is a difference with medium magnitude between coastal group and intermediary group - There is a difference with medium magnitude between highlander group and intermediary group
H2: There is a difference in the level of perceived desirability among main ethnic groups in Madagascar's rural areas.	ANOVA coupled with Tambane's T2 Post Hoc test	- There is no difference between coastal group and highlander group - There is a difference with small magnitude between intermediary group and highlander group - There is a difference with insignificant magnitude between the intermediary group and the coastal group

Hypothesis	Test performed	Main findings
H3: The relationships between cultural dimensions and entrepreneurial intention are moderated by perceived desirability among main ethnic groups in Madagascar's rural areas.	Multiple regression with interaction	*Coastal group* - Moderation effects of the perceived desirability, with small magnitudes, are noted in the relationship between masculinity versus femininity dimension and entrepreneurial intention and in that of indulgence versus restraint dimension and entrepreneurial intention *Highlander group* - Moderation effect of the perceived desirability, with small magnitudes, are noted in the relationship between long-term versus short-term orientation dimension and entrepreneurial intention - Moderation effects of the perceived desirability, with insignificant magnitudes, are noted in the relationship between the four others remaining cultural dimensions (Power distance dimension, individualism versus collectivism dimension, uncertainty avoidance dimension, masculinity versus femininity dimension and indulgence versus restraint dimension) and entrepreneurial intention *Intermediary group* - Moderation effects of the perceived desirability, with small magnitudes, are noted in the relationship between masculinity versus femininity dimension and entrepreneurial intention and in that of indulgence versus restraint dimension and entrepreneurial intention *Overall group* - There is no moderation effect of the perceived desirability in the relationship between individualism versus collectivism dimension and entrepreneurial intention - Moderation effect of the perceived desirability, with small magnitude, is noted in the relationship between power distance dimension and entrepreneurial intention - Moderation effects of the perceived desirability, with very small magnitudes, are noted in the relationship between the five others remaining cultural dimensions (power distance dimension, uncertainty avoidance dimension, masculinity versus femininity dimension, long-term versus short-term orientation dimension and indulgence versus restraint dimension) and entrepreneurial intention

CHAPTER 5: DISCUSSION OF THE RESULTS

The discussion of the results is carried out hypothesis by hypothesis. A conclusion wraps up the discussion and closes this chapter.

5.1 Discussion pertaining to hypothesis 1

H1:	There is a difference in the measures of cultural dimensions among main ethnic groups in Madagascar's rural areas.

According to the findings of the research, the three main ethnic groups studied, present similarities or differences with respect to cultural dimensions, which, to some extent, encapsulate values, beliefs, norms and behavioural patterns of a given community (Leung, Bhagat, Buchan, Erez & Gibson, 2005) and influence diverse aspects of the life of this community, including those relating to entrepreneurial initiatives. More precisely, the findings put forward that:

- The three main ethnic groups studied are at the same level of measures with regard to the individualism versus collectivism dimension and the uncertainty avoidance dimension.
- The three main ethnic groups studied differ noticeably with regard to the indulgence versus restraint dimension with a clear ascent of the highlander group on the two others main ethnic groups (the coastal group and the intermediary group), which also present a slight difference in the measures of the related cultural dimension.
- The highlander group has a measure of power distance dimension slightly lower than that of the two others main ethnic groups (the coastal group and the intermediary group), which are appreciably in the same range with regard to the considered cultural dimension.

- The measure of the masculinity versus femininity dimension and that of the long-term versus short-term orientation dimension for the intermediary group is somewhat higher than that of the two other main ethnic groups (the coastal group and the highlander group).

Thus, at a first glance, it could be seen that the null hypothesis did not enjoy sufficient support as four of the six cultural dimensions showed no differences. This, suggested that there was no difference in the measures of cultural dimensions among the main ethnic groups in Madagascar's rural areas.

However, it is worthwhile to note that, except the case of the indulgence versus restraint dimension, which is a new dimension introduced very recently by Hofstede's et al. (2010) team and for which scholars are still too close for a proper view, the magnitude of the differences between the main ethnic groups studied were small. The values of the means of cultural dimension measures testified to this observation (Table B-47).

Based on this last consideration, it was suggested that the null hypothesis be accepted with a minor modification as follows: "there is no important difference in the measures of cultural dimensions among main ethnic groups in Madagascar's rural areas".

On the basis of a popular Malagasy misconception, taken again by some scholars, who tend to believe that Malagasy ethnic groups are different from to each other (Tehindrazanarivelo, 2002), these findings were surprising. They suggested clearly that in Madagascar's rural areas, individuals had, to a certain extent, the same level of measure whatever the cultural dimensions considered. Madagascar's rural areas could validly be considered a unit of analysis for any subject related to cultural dimensions studies (Hofstede, 1981).

This situation would not be possible within the framework of an environment characterised by a low ethnic diversity as described by Khastar, Kalhorian, Khalouei and Maleki (2001) when they attempted to find the intermediate method for the refinement of Hofstede's (1981) cultural dimensions approach. A completely plausible assumption if it is accepted that the principal determinants

of the culture of a given community comprise inter alia the history, the language and the religion (Bik, 2010).

Although Malagasy people were distinguished by certain characteristics such as traditional occupations (farmers, stockbreeders, foresters, fishermen) and geographical location of its various subgroups, it was largely demonstrated that Malagasy people have a common cultural background so it is not aberrant to advance that it would have only one ethnic group: the Malagasy nation (Ramamonjisoa, 2003).

Furthermore, Malagasy people are characterised by the variety of physical types, which are the fruit of mixtures, the multiplicity of external influences, the unit of material habits, same body of beliefs beyond the diversity of the religious forms, the similarity of the types of social organisation, the structuring of groups and individuals around the ancestor, the community of language beyond the variety of intonations and the unity in diversity (Ramamonjisoa, 2003).

When discussing ethnic groups in the context of Malagasy, various communities could simply be interpreted as a misuse of the concept and the perpetuation of a colonial bad habit. Amselle and M'Bokolo (1985) argued that if the term ethnic group or the word tribe, acquired widespread use since the 19th century, to the detriment of other terms like nation, it is undoubtedly because it was a question of putting aside some communities in order to deny their specific quality. In fact, during the colonial era, it was thus advisable to define the Amerindian, African, Oceanian and some Asian communities as different from each other and without history, in other words as communities whose members did not take part in a common humanity identity (Amselle & M'Bokolo, 1985). Unfortunately, this colonial use of ethnic group terms continues to be the standard by which most scholars discuss the linguistic and cultural aspects of African, Oceanian or Amerindian communities and is often recuperated by the main groups when they speak about their own community. This is precisely what occurred to Malagasy people when they internalised the concept of a population subdivided into 18 ethnic groups or tribes, a clear translation of the perfect success of the sadly famous 'dividere et imperare', meaning divide to reign, implemented by

General Gallieni, General Governor of Madagascar from 1896 to 1905, during his mandate (Ratovonasy, 2012).

Lastly, it should be stressed that it is broadly acknowledged that the Malagasy people, who outwardly show tangible cultural similarities, have been exposed to a multiplicity of external influences and are in a state of perpetual change or movement due to the phenomena of globalisation, might have persistent inward cultural differences (Ghemawat & Reiche, 2011). Accordingly, it is thus completely understandable to see that ethnic groups present between them slight differences with regard to some cultural dimensions.

5.2 Discussion pertaining to hypothesis 2

H2:	There is a difference in the level of perceived desirability among main ethnic groups in Madagascar's rural areas.

Here also, with regard to the level of perceived desirability, the findings of the research, at a first glance conclude that the null hypothesis, which states that there is no difference in the level of perceived desirability among the main ethnic groups in Madagascar's rural areas, is not supported. The intermediary group presents a level of perceived desirability slightly higher than those of the two other main ethnic groups (the coastal group and the highlander group), which are on the same level of perceived desirability.

Furthermore, those findings corroborate what has been developed by Shapero and Sokol (1982) within their framework called the entrepreneurial event model (EEM) and this specifically when they supported that the independent variable, 'perceived desirability', is nurtured by:

- The family which is paramount in shaping of the desirability of the act;
- The peer group is about the influence of the entourage – the more this entourage is important, the more the member of this group to set up a new venture or to take over an existing one; and

- The ethnic group as the belonging to an ethnic group has a strong influence on the entrepreneurial behaviour.

Nevertheless, the weakness of the magnitude of the difference in the level of perceived desirability in Madagascar's rural areas (Table B-47) needs to be considered in practice. While the argument that, to some extent, Madagascar could be considered as a one ethnic group country (Ramamonjisoa, 2003), it makes sense to advance that the null hypothesis could be accepted with a slight change as followed: "there is no important difference in the level of perceived desirability among the main ethnic groups in Madagascar's rural areas".

5.3 Discussion pertaining to hypothesis 3

H3:	The relationships between cultural dimensions and entrepreneurial intention are moderated by perceived desirability among main ethnic groups in Madagascar's rural areas.

Sub-problem 3 of the research aimed to measure the relationships between cultural dimensions and entrepreneurial intention and the moderation effects of the perceived desirability on these relationships. The findings highlight the fact that, for all cultural dimensions, the moderation effects have been only demonstrated among the highlander group and to some extent within the overall group, with an exception made for the individualism versus collectivism dimension. For the other two main ethnic groups (the coastal group and the intermediary group), the moderation effects are related to the relationships of entrepreneurial intention with the masculinity versus femininity dimension and the indulgence versus restraint dimension respectively.

As seen previously, it could be suggested that the null hypothesis, which asserts that the relationships between cultural dimensions are not moderated by perceived desirability among main ethnic groups in Madagascar's rural areas, is not wholly verified. However, when observing the magnitude of any

demonstrated moderation effects, it appears that, they are so small that they could be ignored, even for the case of the indulgence versus restraint dimension. The variance of the entrepreneurial intention explained by the related model regression 2, with the cultural dimension and the perceived desirability as predictors, reach no more than 8.43 percent (Table 40).

Thus, it is conceivable to suggest that the null hypothesis related to hypothesis 3 is supported by the results of the research if rephrased as follows: “the relationships between cultural dimensions and entrepreneurial intention are not importantly moderated by perceived desirability among the main ethnic groups in Madagascar’s rural areas”.

It is worthwhile noting that these findings appear to be an interesting new point of view compared to those of Cristina and Dwayne (2009), when they studied the comparative strategies among hotels in small developing Caribbean states. They discovered the relationship among entrepreneurial intention, perceived desirability and perceived feasibility and suggested that the moderation effect of culture on this relationship is plausible.

The suggestion supported by Fernandez, Carlson, Stepina and Nicholson (1997) and George and Prahabu (2000) who argued that national culture moderates entrepreneurial intention, is another interesting comparison to be made. Indeed, the research seems to be a seminal one in the field of the moderation effect of perceived desirability on the relationship between cultural dimensions and entrepreneurial intention, particularly in the context of Madagascar.

The variances explained by model 2 of the multiple regression launched, which has as predictors of the entrepreneurial intention, the cultural dimension and the perceived desirability, can be compared with those of model 1, which has as predictor of the entrepreneurial intention, the cultural dimension. The perceived desirability explained 38.5 percent of the variance of entrepreneurial intention in Madagascar’s rural areas. This observation confirms that which has been underlined by Urban et al (2008) in their discussion on the contribution of the

perceived feasibility, the perceived desirability and the propensity to act to the variance of the entrepreneurial intention. It also mirrors the findings of Kennedy et al. (2003), when they studied a sample of Australian students and found that the desirability, the social norms and the feasibility explained approximately 53 percent of the intention to create a new venture. Audet (2001) studied a sample of students in the Administration and Business Faculty at Concordia University; the results showed that the power of prediction of the desirability is appreciably more important than that of the feasibility. Thus, seeking the moderation effects of perceived desirability on the relationships between cultural dimensions and entrepreneurial intention was sense full.

Lastly, this research revealed that the highlander group is the only main ethnic group among the three studied to show that the perceived desirability has a moderation effect on the relationships between cultural dimensions and entrepreneurial intention, although the magnitudes of these moderation effects are marginal. In addition, if the indulgence versus restraint dimension is not considered, the measures of cultural dimensions of the highlander group appear as the central ones compared to those of the two others main ethnic groups (the coastal group and the intermediary group) (Table B-47). This observation suggests, to some degree, that the highlander group could be considered the 'reference group' for Madagascar's rural areas with regard to entrepreneurial initiatives. This makes sense, if the assumption stating that Madagascar would be a one ethnic group nation is endorsed (Ramamonjisoa, 2003).

5.4 Conclusion

Taking into consideration the findings of the research with particular emphasis on the magnitude of the effect size within the framework of the testing of the hypotheses 1 and 2 on the one hand and the likely demonstrated assumption that Madagascar would be a one ethnic group nation, on the other hand; it can be concluded that the related null hypothesis could be accepted if slightly modified as follows:

- H0 of the H1: “there is no important difference in the measures of cultural dimensions among the main ethnic groups in Madagascar’s rural areas”.
- H0 of the H2: “there is no important difference in the level of perceived desirability among the main ethnic groups in Madagascar’s rural areas”.

For hypothesis 3, it was demonstrated that the moderation effects of the perceived desirability on the relationships between cultural dimensions and entrepreneurial intention, concern essentially the highlander group and the overall group, an observation, which reinforces the assumption that Madagascar would be a one ethnic group nation. Thus, it can be suggested that the moderation effect of perceived desirability on the relationships between cultural dimensions and entrepreneurial intention are also not important in Madagascar’s rural areas.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

A broad conclusion of the research will open this chapter followed by the recommendations and closed by the suggestions for further research.

6.1 Conclusion of the research

The research aimed at resolving the main problem related to the comparison of Malagasy main ethnic groups in terms of measures of cultural dimensions and perceived desirability with respect to entrepreneurship, and to the examination of the moderation effects of this perceived desirability on the relations between cultural dimensions and entrepreneurial intention.

Madagascar is facing a deceiving economic performance characterised by an high level of poverty in its population and vigorous actions towards the stimulation of self-employment appears to be the appropriate way to deal with this situation. The research would be of inestimable help for political decision makers and relevant institutions supporting local communities in pursuing their endeavour in this matter, as it is the first of its kind in the country.

To carry out the research, the use of a non-experimental cross-sectional survey was retained. The studied population was a sample of 2,235 adult individuals subdivided into three sub-samples: 736 adult individuals for the coastal group, 744 adult individuals for the highlander group and 755 adult individuals for the intermediary group. The sample was obtained through cluster sampling with a quota approach. A structured questionnaire directly administrated by trained interviewers was the source of data.

After entering the data on Google Drive and clearing it through Excel, SPSS 21 software was used for the processing. Then, depending on the characteristic of the hypothesis, a one-way ANOVA (Hypotheses 1 and 2) or a multiple regression with interaction (hypothesis 3) was performed. Those tests appeared very robust with regard to the details of results that have been produced relative to the main ethnic groups' samples and the overall sample.

As main findings, the research revealed that there is no important difference in the measures of cultural dimensions among the main ethnic groups in Madagascar's rural areas (sub-problem 1) and there is no important difference in the level of perceived desirability among the main ethnic groups in Madagascar's rural areas (sub-problem 2). Finally, the relationship between cultural dimensions and entrepreneurial intention are not importantly moderated by perceived desirability among the main ethnic groups in Madagascar's rural areas (sub-problem 3).

The findings are comprehensible due to the fact that on one hand, the Malagasy people, apart from the unicity of language, also has a common cultural background so that, it could be considered as a country with a low ethnic diversity even a one ethnic group country. On the other hand, the slight differences observed in some results related to each main ethnic group were sustained by the latent inward cultural differences, besides the perceptible outward cultural similarities.

Moreover, the findings of the research:

- are in line with those of Khastar et al (2011) in their attempt to find an intermediate method for the refinement of the Hofstede's (1980) cultural dimensions approach;
- verify the findings of Shapero and Sokol (1982) with regard to the underpinning elements of the perceived desirability;
- open new horizons with regard to the moderation effects of the perceived desirability on the relationships of cultural dimensions and entrepreneurial intention comparatively to those of Cristina and Dwayne (2009), Fernandez et al. (1997) and George and Prahabu (2000) who respectively found that, to some extent, culture or national culture moderates entrepreneurial intention; and
- reveal that, to some extent, the highlander group could be considered as the 'reference group' of Madagascar's rural areas with regard to entrepreneurial initiatives.

Based on the measures of cultural dimensions of the highlander group (Table B-48), which is the reference group, and considering that Madagascar is a one ethnic group country, it could be reasonably proposed that the entrepreneurial profile of people living in rural areas is schematised in Figure 11.

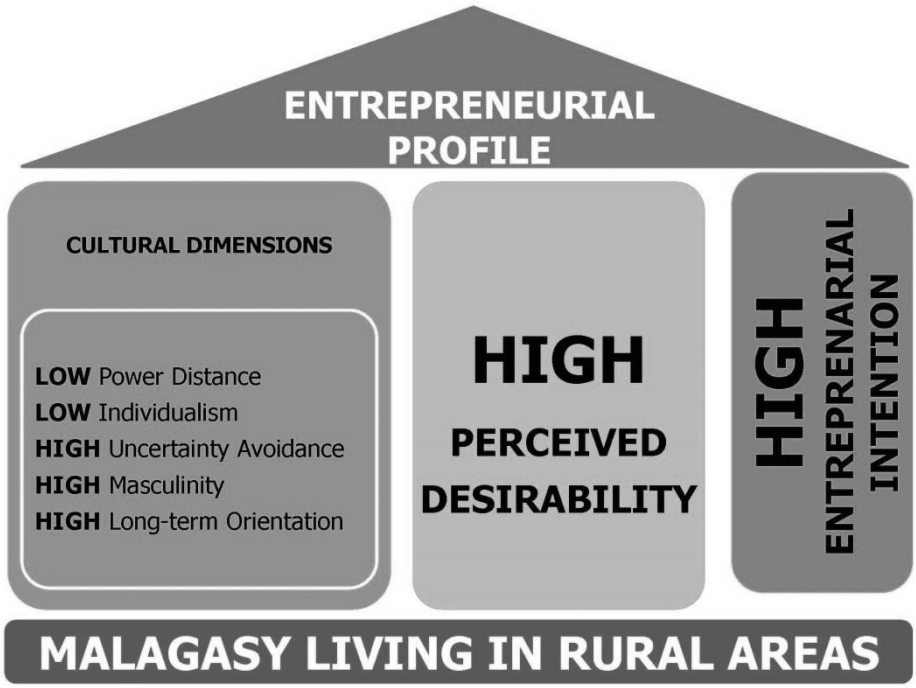

Figure 11: Malagasy living in rural areas entrepreneurial profile
(Ratsimanetrimanana, 2014)

Note: Indulgence versus restraint dimension is removed as scholars are not close enough for a proper view on this dimension

In other words, Malagasy living in rural areas are characterised by a high level of profound willingness to create new ventures in the near or distant future and this, insofar as they find that the idea to create a new venture attractive. However, as for them, people are all equal; it would be judicious if any power of decision could be well shared and dispersed. Furthermore, they have an unquestionable preference for a structured environment where the rules and the directives are clearly defined and implemented. They also desire harmony in society, far from any authoritarian abuse or any aggressive behaviour. The

collective responsibility is their trademark, the traditions their source of inspiration and no fear of hard work, are in their point of view warranty for a brighter future (Hofstede, et al., 2010).

On a more practical level, through the use of the table of Hofstede's et al. (2010) cultural dimensions and determinants of entrepreneurship (Table B-49) developed by Bwisa and Ndolo (2011), it could be concluded that Malagasy living in rural areas are (Table B-50):

- less likely to be entrepreneurs when considering the level of the measures of the power distance dimension, the individualism versus collectivism dimension and the uncertainty avoidance dimension; and
- more likely to be entrepreneurs when considering the levels of the measures of the masculinity versus femininity dimension and the long-term versus short-term orientation dimension.

The limitation of the research, identified as the level of poverty of the Malagasy people that could bias spontaneous answers from the respondents, is not of any concern. In fact, because the sampling procedure used, the findings of the research unveil, to some extent, a snapshot of the entrepreneurial intention in Madagascar's rural areas.

6.2 Recommendations

As the research is a pioneering one in its kind in the context of Madagascar, it is obvious that the findings that have been put forward would be useful in order to clarify some questions relating to entrepreneurial initiatives at this level, as well at the strategic and operational levels. If it is largely acknowledged that Malagasy people experience an unacceptable level of poverty, to overcome this concern, entrepreneurship appears to be a suitable way.

Thus, by taking into account the Malagasy entrepreneurial profile developed above:

- At the strategic level, relevant Malagasy decision makers should re-examine all strategies that have been developed with regard to the promotion of self-employment in particular and entrepreneurship in general. In fact, the consideration of this profile in their approach appears to be judicious insofar as it gives useful information for the framing of suitable strategies and thus for avoiding cut and paste strategies usual in the developing countries whereas it is completely possible to tailor the strategies with national realities. Moreover, a bottom up approach is strongly advised, as it appears to be the most suitable in view of the fact that for Malagasy the power is better when shared and well dispersed.

- At the operational level, the actors of the socio-economic development at grassroots level, such as microfinance institutions must prioritise the setting up of a mandatory technical backstopping structure for supporting micro-funding beneficiaries in their will to become a successful self-employed person or entrepreneur. Granting micro-funding is a good starting point but to ensure the success and sustainability of the related new ventures is more important insofar as on that lies the tangible inversion of the curve of poverty in Madagascar. To do so, they have to pay particular attention to the masculine culture and long-term orientation culture of Malagasy living in rural areas when deciding the type of enterprise development approach to be implemented for this target population.

6.3 Suggestions for further research

As a logical continuation of that which has been achieved through this research, it would be interesting to:

- Complete the knowledge of the situation in Madagascar with regard to the entrepreneurial activities in launching the same research in the urban areas of the country;

- Apply the theme of the research in a country characterised by a diversity of ethnic groups such as South Africa, in order to see to what extent cultural dimensions may differ between them and the moderation effect of the perceived desirability on the relationships between cultural dimensions and entrepreneurial intention;
- Deepen the understanding of the antecedents of entrepreneurial intention, within the context of Madagascar, in order to better identify the real triggers of the motivation to create new ventures so that the virtuous circle of 'from intention to action' could be duly fulfilled and an adequate toolkit for Malagasy enterprise incubation be set up.

Definitely, through this research it has been understood that in entrepreneurship, envisioning a business idea is just the starting point, not the final destination.

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APPENDIX A: RESEARCH INSTRUMENT

1. GENERAL INFORMATION

Please give some information about the localisation of your village

REGION	
DISTRICT	
COMMUNE	
VILLAGE	

2. DEMOGRAPHICS

Please give some information about yourself

1. Are you?	Male ☐ Female ☐
2. How old are you?	Less than 20 years ☐ 20 – 29 years ☐ 30 – 39 years ☐ 40 – 49 years ☐ 50 – 59 years ☐ 60 years and more ☐
3. What ethnic group do you consider yourself to belong to?	Betsimisatraka ☐ Sakalava ☐ Merina ☐ Betsileo ☐ Bezanonzano ☐ Tsimihety ☐
4. What level of education did you reach?	Without education ☐ Primary ☐ Secondary and more ☐

3. CULTURAL DIMENSIONS

3.1 Power distance (Yoo, Donthu, & Lenartowicz, 2011)

Rate the following statement based on the scale provided below:

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

5. People in higher positions should make most decisions without consulting people in lower positions.	1	2	3	4	5
6. People in higher positions should not ask the opinions of people in lower positions too frequently.	1	2	3	4	5
7. People in higher positions should avoid social interaction with people in lower positions.	1	2	3	4	5
8. People in lower positions should not disagree with decisions by people in higher positions.	1	2	3	4	5
9. People in higher positions should not delegate important tasks to people in lower positions.	1	2	3	4	5

3.2 Individualism versus collectivism (Yoo, Donthu, & Lenartowicz, 2011)

Rate the following statement based on the scale provided below:

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

10. Individuals should sacrifice self-interest for the group	1	2	3	4	5
11. Individuals should stick with the group even through difficulties.	1	2	3	4	5
12. Group welfare is more important than individual rewards.	1	2	3	4	5
13. Group success is more important than individual success.	1	2	3	4	5
14. Individuals should only pursue their goals after considering the welfare of the group.	1	2	3	4	5

15. Group loyalty should be encouraged even if individual goals suffer.	1	2	3	4	5

3.3 Uncertainty avoidance ((Zhao, 2010))

Rate the following statement based on the scale provided below:

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

16. Orderliness and consistency should be stressed, even at the expense of experimentation and innovation	1	2	3	4	5
17. Person who leads a structured life that has few unexpected events is missing a lot of excitement	1	2	3	4	5
18. Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do	1	2	3	4	5
19. Leaders in community should provide detailed plans concerning how to achieve goals	1	2	3	4	5

3.4 Masculinity versus femininity (Yoo, Donthu, & Lenartowicz, 2011)

Rate the following statement based on the scale provided below:

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

20. It is more important for men to have a professional career than it is for women.	1	2	3	4	5
21. Men usually solve problems with logical analysis; women usually solve problems with intuition.	1	2	3	4	5
22. Solving difficult problems usually requires an active, forcible approach, which is typical of men.	1	2	3	4	5
23. There are some jobs that a man can always do better than a woman.	1	2	3	4	5

3.5 Long-term versus short-term Orientation (Yoo, Donthu, & Lenartowicz, 2011)

Rate the following statement based on the scale provided below:

Not at all important = 1 Not important = 2 Neutral = 3 Important = 4 Very important =5

24. Careful management of money (Thrift)	1	2	3	4	5
25. Going on resolutely in spite of opposition (Persistence)	1	2	3	4	5
26. Personal steadiness and stability	1	2	3	4	5
27. Long-term planning	1	2	3	4	5
28. Giving up today's fun for success in the future	1	2	3	4	5
29. Working hard for success in the future	1	2	3	4	5

3.6 Indulgence versus Restraint (dos Santos Góis Graça, 2011)

Rate the following statement based on the scale provided below:

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

30. Taking all things together, you are very happy over the way your life turns out	1	2	3	4	5
31. You have completely free choice and control over the way your life turns out	1	2	3	4	5
32. Leisure time is very important in your life	1	2	3	4	5

4. PERCEIVED DESIRABILITY (Kennedy, Drennan, Renfrow & Watson, 2003)

Rate the following statement based on the scale provided below:

Very unattractive = 1 Unattractive = 2 Neutral = 3 Attractive = 4 Very attractive =5					
33. How attractive is it for you to start your own business?	1	2	3	4	5
Strongly hate doing it = 1 Hate doing it = 2 Neutral = 3 Like doing it = 4 Strongly like doing it =5					
34. If you started your own business, how would you feel about doing it?	1	2	3	4	5
Very tense = 1 Tense = 2 Neutral = 3 Relaxed = 4 Very relaxed =5					
35. If you started your own business, how tense would you be?	1	2	3	4	5
Very unenthusiastic = 1 Unenthusiastic = 2 Neutral = 3 Enthusiastic = 4 Very enthusiastic =5					
36. If you started your own business, how enthusiastic would you be?	1	2	3	4	5

5. ENTREPRENEURIAL INTENTION (Liñán & Chen, 2009)

Indicate your level of agreement with the following statements

Strongly disagree = 1 Disagree = 2 Neutral = 3 Agree = 4 Strongly agree =5

37. You are ready to do anything to be an entrepreneur	1	2	3	4	5
38. Your professional goal is to become an entrepreneur	1	2	3	4	5
39. You will make every effort to start and run my own business	1	2	3	4	5
40. You are determined to create a business in the future	1	2	3	4	5
41. You have very seriously thought of starting a business	1	2	3	4	5
42. You have the firm intention to start a business some day	1	2	3	4	5

APPENDIX B: ADDITIONAL RESULTS TABLES

Table B-1: Owning rate of* non-agricultural enterprise and agricultural wage-earning enterprise *by region and residence area.

Region	Owning rate (%)	
	Non-agricultural enterprise	Agricultural wage-earning enterprise
Alaotra Mangoro	46.3	22.8
Amoron'i Mania	30.6	37.9
Analamanga	44.4	15.0
Analanjirofo	36.4	18.9
Androy	25.4	6.8
Anosy	35.0	5.8
Atsimo Andrefana	40.9	0.9
Atsimo Atsinanana	18.7	15.8
Atsinanana	40.9	20.2
Betsiboka	56.8	13.3
Boeny	45.2	4.2
Bongolava	29.1	29.0
Diana	14.2	0.3
Ihorombe	14.7	6.3
Itasy	34.1	33.1
Matsiatra Ambony	34.3	35.8
Melaky	42.2	2.6
Menabe	23.6	4.6
Sava	15.5	1.2
Sofia	27.0	0.0
Vakinankaratra	44.7	30.0
Vatovavy Fitovinany	34.0	31.2
Residence area		
Urban	42.5	9.5
Rural	32.6	17.9
MADAGASCAR	**34.8**	**16.0**

Note. From "Enquête Permanente auprès des Ménages 2010 – Rapport Principal –." by Institut National de la Statistique – INSTAT -, 2011.

Table B-2: Distribution of respondents with regard to gender, main ethnic groups and age

GENDER	AGE	MAIN ETHNIC GROUPS			TOTAL
		Coastal	Highlander	Intermediary	
Male	Less than 20 years	9	21	14	44
	20-29 years	46	73	42	161
	30-39 years	117	98	90	305
	40-49 years	137	105	142	384
	50-59 years	50	53	74	177
	60 years and more	8	15	16	39
	Sub-total	367	365	378	1 110
Female	Less than 20 years	23	18	16	57
	20-29 years	60	79	54	193
	30-39 years	94	92	96	282
	40-49 years	142	111	123	376
	50-59 years	44	67	73	184
	60 years and more	6	12	15	33
	Sub-total	369	379	377	1 125
Overall sample	Less than 20 years	32	39	30	101
	20-29 years	106	152	96	354
	30-39 years	211	190	186	587
	40-49 years	279	216	265	760
	50-59 years	94	120	147	361
	60 years and more	14	27	31	72
	Total	736	744	755	2 235

Table B-3: Descriptive statistics related to cultural dimension scales in Madagascar's rural areas

Items	Mean	Std. Deviation	Analysis N	Ratio of case to variables
Power distance scale				
PD1: People in higher positions should make most decisions without consulting people in lower positions.	1.858	.4938	2235	447 to 1
PD2: People in higher positions should not ask the opinions of people in lower positions too frequently.	1.860	.4970		
PD3: People in higher positions should avoid social interaction with people in lower positions.	1.863	.4962		
PD4: People in lower positions should not disagree with decisions by people in higher positions.	3.820	.6723		
PD5: People in higher positions should not delegate important tasks to people in lower positions.	3.498	.9757		
Individualism versus collectivism scale				
IC1: Individuals should sacrifice self-interest for the group	3.953	.4848	2235	372.5 to 1
IC2: Individuals should stick with the group even through difficulties.	3.953	.4811		

Items	Mean	Std. Deviation	Analysis N	Ratio of case to variables
IC3: Group welfare is more important than individual rewards.	3.965	.4913		
IC4: Group success is more important than individual success.	3.966	.4927		
IC5: Individuals should only pursue their goals after considering the welfare of the group.	3.962	.4819		
IC6: Group loyalty should be encouraged even if individual goals suffer.	3.956	.4786		
Uncertainty avoidance scale				
UA1: Orderliness and consistency should be stressed, even at the expense of experimentation and innovation.	3.932	.5347		
UA2: Person who leads a structured life that has few unexpected events is missing a lot of excitement.	3.849	.5364		
UA3: Societal requirements and instructions should be spelled out in detail so community members know what they are expected to do	4.005	.3749	2235	558.8 to 1
UA4: Leaders in community should provide detailed plans concerning how to achieve goals	4.005	.3861		
Masculinity versus femininity scale				
MF1: It is more important for men to have a professional career than it is for women.	3.570	.9837		
MF2: Men usually solve problems with logical analysis; women usually solve problems with intuition.	3.939	.4531	2235	558.8 to 1
MF3: Solving difficult problems usually requires an active, forcible approach, which is typical of men.	3.545	.9056		
MF4: There are some jobs that a man can always do better than a woman.	3.630	.9350		
Long-term versus short-term Orientation scale				
LSO1: Careful management of money (Thrift)	4.168	.4048		
LSO2: Going on resolutely in spite of opposition (Persistence)	4.064	.2969		
LSO3: Personal steadiness and stability	4.070	.2879	2235	372.5 to 1
LSO4: Long-term planning	4.125	.3546		
LSO5: Giving up today's fun for success in the future	4.167	.3909		
LSO6: Working hard for success in the future	4.142	.3701		
Indulgence versus Restraint scale				
IR1: Taking all things together, you are very happy over the way your life turns out	2.797	1.0951		
IR2: You have completely free choice and control over the way your life turns out	3.136	1.0287	2235	745 to 1
IR3: Leisure time is very important in your life	4.151	.5638		

Table B-4: Power distance scale correlation matrix

	PD1	PD2	PD3	PD4	PD5
PD1	1.000	.985	.892	.144	.011
PD2	.985	1.000	.888	.137	.008
PD3	.892	.888	1.000	.114	.011
PD4	.144	.137	.114	1.000	.203
PD5	.011	.008	.011	.203	1.000

Table B-5: Individualism versus collectivism scale correlation matrix

	IC1	IC2	IC3	IC4	IC5	IC6
IC1	1.000	.975	.944	.941	.947	.948
IC2	.975	1.000	.957	.952	.958	.959
IC3	.944	.957	1.000	.986	.972	.957
IC4	.941	.952	.986	1.000	.971	.956
IC5	.947	.958	.972	.971	1.000	.975
IC6	.948	.959	.957	.956	.975	1.000

Table B-6: Uncertainty avoidance scale correlation matrix

	UA1	UA2	UA3	UA4
UA1	1.000	.233	.194	.407
UA2	.233	1.000	.244	.155
UA3	.194	.244	1.000	.634
UA4	.407	.155	.634	1.000

Table B-7: Masculinity versus femininity scale correlation matrix

	MF1	MF2	MF3	MF4
MF1	1.000	.247	.711	.830
MF2	.247	1.000	.223	.129
MF3	.711	.223	1.000	.731
MF4	.830	.129	.731	1.000

Table B-8: Long-term versus short-term orientation scale correlation matrix

	LSO1	LSO2	LSO3	LSO4	LSO5	LSO6
LSO1	1.000	.511	.464	.533	.535	.451
LSO2	.511	1.000	.707	.452	.333	.374
LSO3	.464	.707	1.000	.519	.401	.445
LSO4	.533	.452	.519	1.000	.608	.485
LSO5	.535	.333	.401	.608	1.000	.863
LSO6	.451	.374	.445	.485	.863	1.000

Table B-9: Indulgence versus restraint scale correlation matrix

	IR1	IR2	IR3
IR1	1.000	.694	.009
IR2	.694	1.000	.171
IR3	.009	.171	1.000

Table B-10: Power distance scale anti-image correlation matrix

	PD1	PD2	PD3	PD4	PD5
PD1	.660[a]	-.930	-.227	-.054	-.010
PD2	-.930	.670[a]	-.106	.020	.017
PD3	-.227	-.106	.961[a]	.031	-.011
PD4	-.054	.020	.031	.673[a]	-.203
PD5	-.010	.017	-.011	-.203	.498[a]

a. Measures of Sampling Adequacy(MSA)

Table B-11: Individualism versus collectivism scale anti-image correlation matrix

	IC1	IC2	IC3	IC4	IC5	IC6
IC1	.909[a]	-.666	.003	-.051	-.034	-.088
IC2	-.666	.899[a]	-.163	.006	-.045	-.210
IC3	.003	-.163	.888[a]	-.719	-.210	.015
IC4	-.051	.006	-.719	.891[a]	-.204	-.042
IC5	-.034	-.045	-.210	-.204	.923[a]	-.545
IC6	-.088	-.210	.015	-.042	-.545	.929[a]

a. Measures of Sampling Adequacy(MSA)

Table B-12: Uncertainty avoidance scale anti-image correlation matrix

	UA1	UA2	UA3	UA4
UA1	.554[a]	-.210	.132	-.382
UA2	-.210	.589[a]	-.213	.080
UA3	.132	-.213	.527[a]	-.620
UA4	-.382	.080	-.620	.524[a]

a. Measures of Sampling Adequacy(MSA)

Table B-13: Masculinity versus femininity scale anti-image correlation matrix

	MF1	MF2	MF3	MF4
MF1	.701[a]	-.212	-.240	-.659
MF2	-.212	.578[a]	-.130	.177
MF3	-.240	-.130	.837[a]	-.372
MF4	-.659	.177	-.372	.672[a]

a. Measures of Sampling Adequacy(MSA)

Table B-14: Long-term versus short-term orientation scale anti-image correlation matrix

	LSO1	LSO2	LSO3	LSO4	LSO5	LSO6
LSO1	.876[a]	-.278	-.037	-.169	-.248	.089
LSO2	-.278	.742[a]	-.558	-.077	.129	-.103
LSO3	-.037	-.558	.767[a]	-.240	.091	-.172
LSO4	-.169	-.077	-.240	.830[a]	-.389	.186
LSO5	-.248	.129	.091	-.389	.650[a]	-.814
LSO6	.089	-.103	-.172	.186	-.814	.671[a]

a. Measures of Sampling Adequacy(MSA)

Table B-15: Indulgence versus restraint scale anti-image correlation matrix

	IR1	IR2	IR3
IR1	.482[a]	-.703	.155
IR2	-.703	.483[a]	-.229
IR3	.155	-.229	.278[a]

a. Measures of Sampling Adequacy(MSA)

Table B-16: Communalities of power distance scale

Item	Extraction
PD1	.971
PD2	.968
PD3	.901
PD4	.585
PD5	.633

Table B-17: Revised communalities of power distance scale

Item	Extraction
PD1	.972
PD2	.969
PD3	.904

Table B-18: Communalities of individualism versus collectivism scale

Item	Extraction
IC1	.952
IC2	.967
IC3	.972
IC4	.969
IC5	.974
IC6	.965

Table B-19: Communalities of uncertainty avoidance scale

Item	Extraction
UA1	.391
UA2	.232
UA3	.632
UA4	.724

Table B-20: Revised communalities of uncertainty avoidance scale

Item	Extraction
UA3	.817
UA4	.817

Table B-21: Communalities of masculinity versus femininity scale

Item	Extraction
MF1	.856
MF2	.117
MF3	.779
MF4	.839

Table B-22: Revised communalities of masculinity versus femininity scale

Item	Extraction
MF1	.859
MF3	.784
MF4	.873

Table B-23: Communalities of long-term versus short-term orientation scale

Item	Extraction
LSO1	.573
LSO2	.833
LSO3	.786
LSO4	.610
LSO5	.933
LSO6	.843

Table B-24: Communalities of Indulgence versus restraint scale

Item	Extraction
IR1	.807
IR2	.856
IR3	.054

Table B-25: Revised communalities of Indulgence versus restraint scale

Item	Extraction
IR1	.847
IR2	.847

Table B-26: Total variance explained for power distance scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.873	57.462	57.462	2.873	57.462	57.462	2.852	57.037	57.037
2	1.185	23.705	81.168	1.185	23.705	81.168	1.207	24.130	81.168
3	.786	15.726	96.894						
4	.141	2.817	99.711						
5	.014	.289	100.000						

Table B-27: Total variance explained for individualism versus collectivism scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.799	96.657	96.657	5.799	96.657	96.657
2	.089	1.481	98.138			
3	.053	.889	99.027			
4	.024	.398	99.425			
5	.021	.349	99.774			
6	.014	.226	100.000			

Table B-28: Total variance explained for uncertainty avoidance scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.979	49.481	49.481	1.979	49.481	49.481
2	.915	22.879	72.359			
3	.798	19.946	92.306			
4	.308	7.694	100.000			

Table B-29: Total variance explained for masculinity versus femininity scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.591	64.769	64.769	2.591	64.769	64.769
2	.936	23.398	88.167			
3	.314	7.841	96.008			
4	.160	3.992	100.000			

Table B-30: Total variance explained for long-term versus short-term orientation scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.565	59.418	59.418	3.565	59.418	59.418	2.373	39.555	39.555
2	1.013	16.885	76.302	1.013	16.885	76.302	2.205	36.747	76.302
3	.565	9.413	85.715						
4	.475	7.911	93.627						
5	.273	4.545	98.171						
6	.110	1.829	100.000						

Table B-31: Total variance explained for indulgence versus restraint scale

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.717	57.226	57.226	1.717	57.226	57.226
2	.996	33.195	90.421			
3	.287	9.579	100.000			

Table B-32: Moderation effect of the perceived desirability on the relationship between power distance dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Power distance dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.04	4.01	4.05
	HIGH	4.16	4.17	4.50

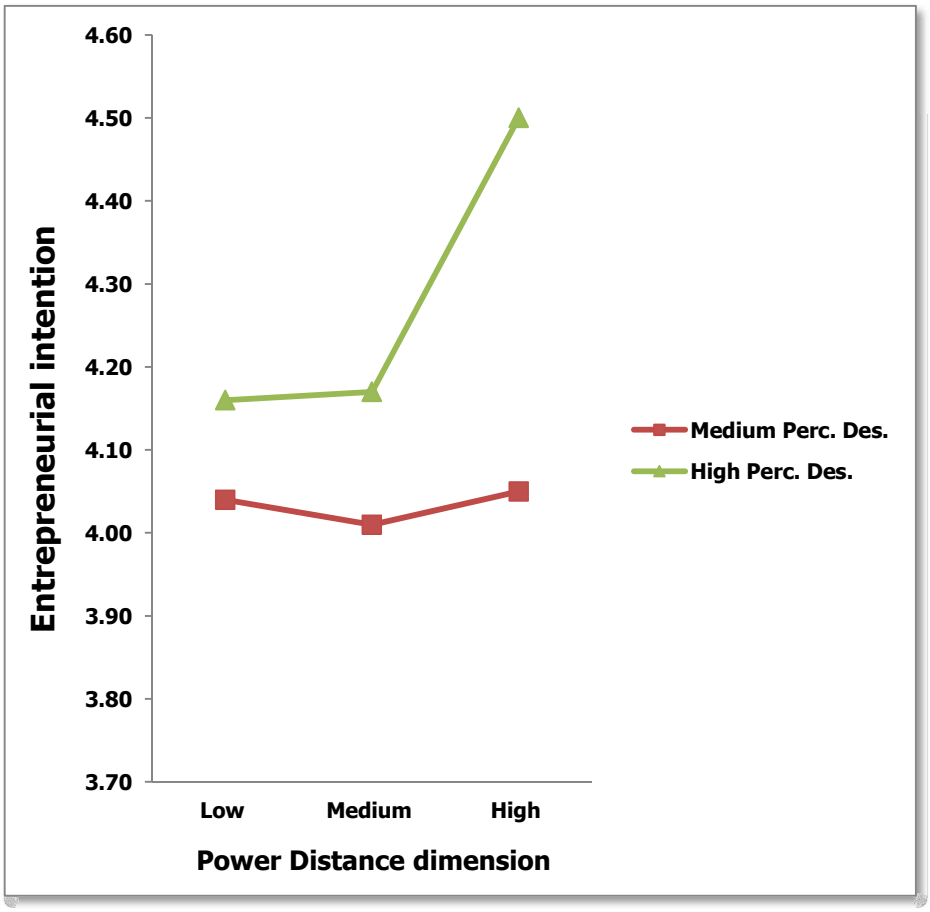

Figure B-1: Moderation effect of perceived desirability on the relationship between power distance dimension and entrepreneurial intention among the highlander group

Table B-33: Moderation effect of the perceived desirability on the relationship between power distance dimension and entrepreneurial intention within the overall group in Madagascar's rural areas (9 cells means)

		Power distance dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	3.15	3.01	3.42
	MEDIUM	4.04	4.01	4.01
	HIGH	4.46	4.44	4.67

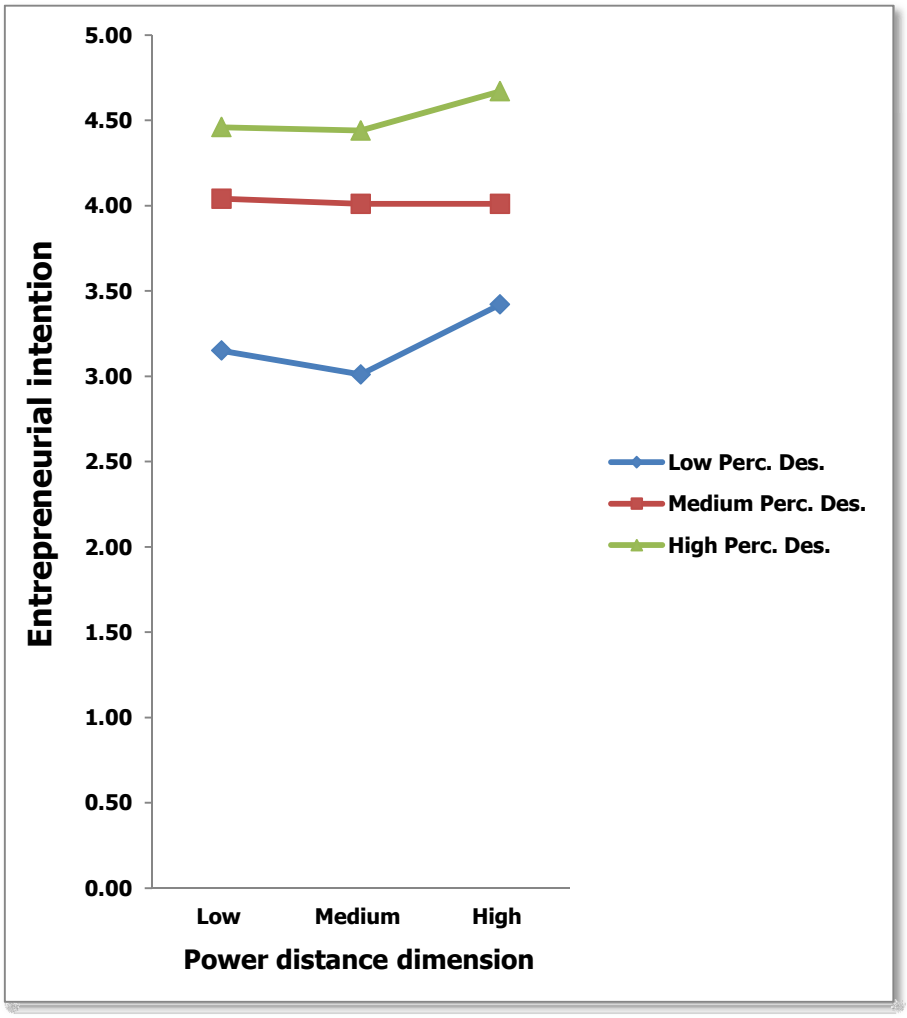

Figure B-2: Moderation effect of perceived desirability on the relationship between power distance dimension and entrepreneurial intention within the overall group

Table B-34: Moderation effect of the perceived desirability on the relationship between individualism versus collectivism dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Individualism versus collectivism dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.00	4.01	4.23
	HIGH	4.04	4.12	4.50

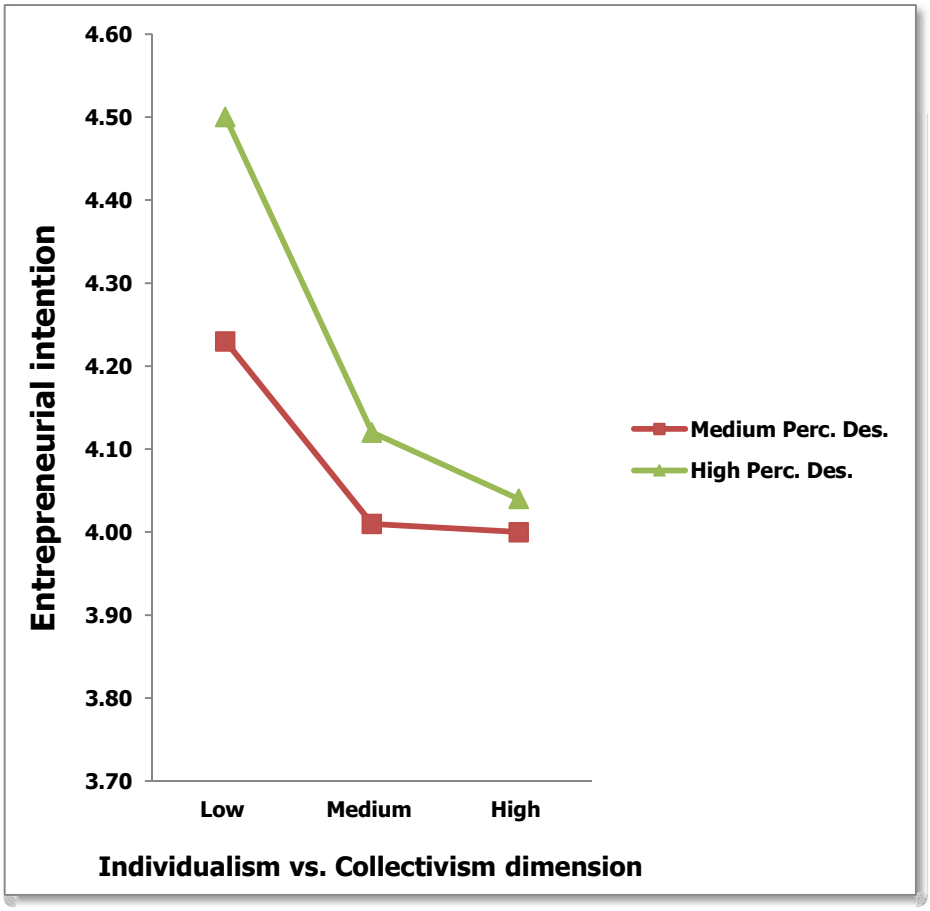

Figure B-3: Moderation effect of perceived desirability on the relationship between individualism versus collectivism dimension and entrepreneurial intention among highlander group

Table B-35: Moderation effect of the perceived desirability on the relationship between uncertainty avoidance dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Uncertainty avoidance dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.00	4.01	4.21
	HIGH	4.03	4.12	4.33

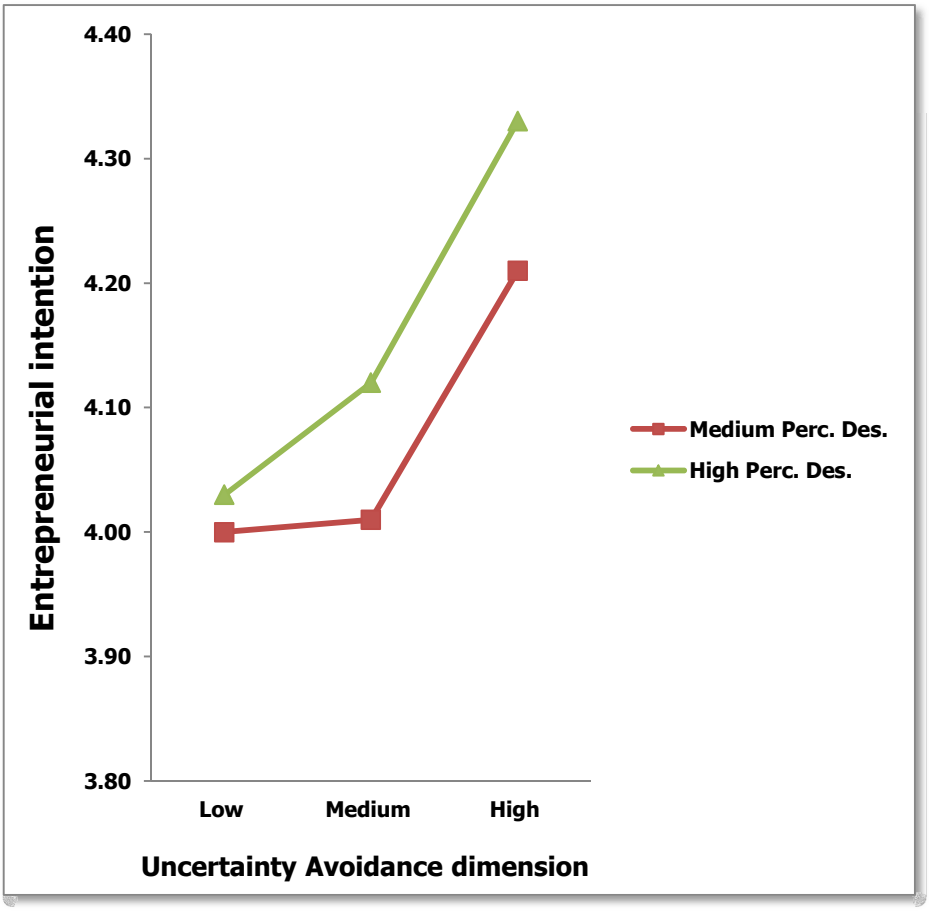

Figure B-4: Moderation effect of perceived desirability on the relationship between uncertainty avoidance dimension and entrepreneurial intention among highlander group

Table B-36: Moderation effect of the perceived desirability on the relationship between uncertainty avoidance dimension and entrepreneurial intention within the overall group in Madagascar's rural areas (9 cells means)

		Uncertainty avoidance dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	2.79	3.10	3.00
	MEDIUM	4.03	4.01	4.07
	HIGH	4.63	4.39	4.64

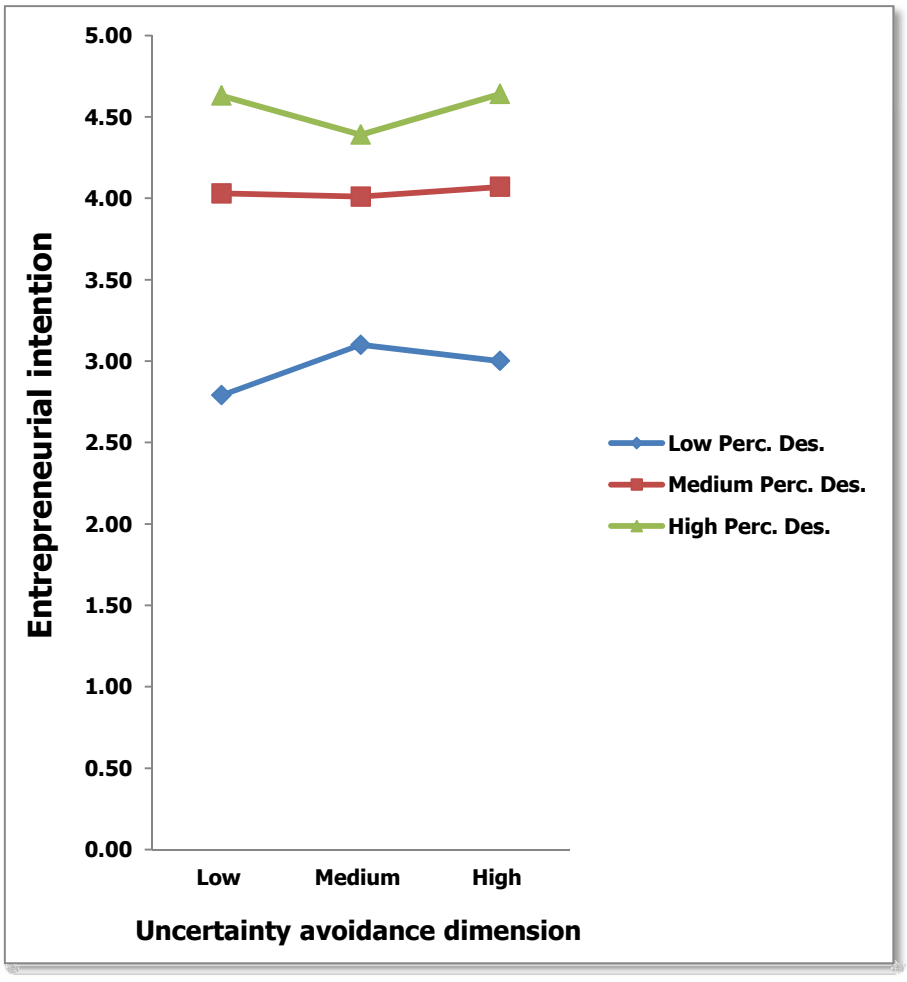

Figure B-5: Moderation effect of perceived desirability on the relationship between uncertainty avoidance dimension and entrepreneurial intention within the overall group

Table B-37: Moderation effect of the perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention within the coastal group in Madagascar's rural areas (9 cells means)

		Masculinity versus femininity dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	3.67	3.80	2.00
	MEDIUM	4.00	4.02	4.00

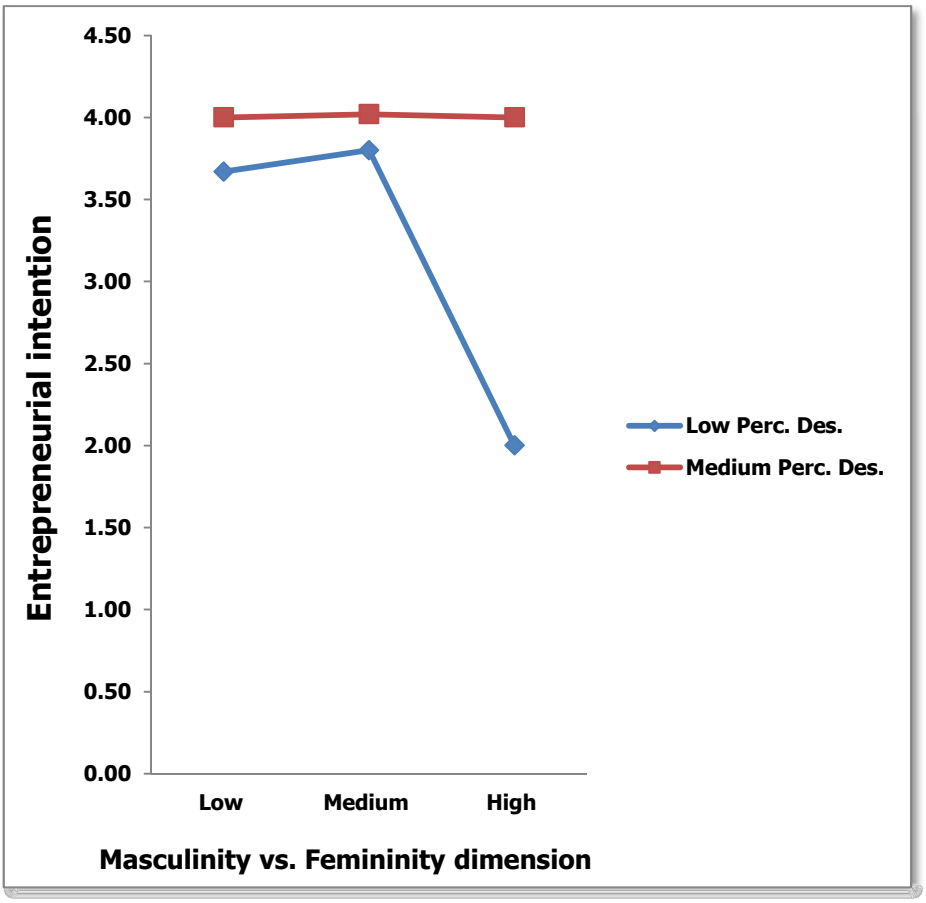

Figure B-6: Moderation effect of perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention among coastal group

Table B-38: Moderation effect of the perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Masculinity versus femininity dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.01	4.01	4.23
	HIGH	4.15	4.13	4.50

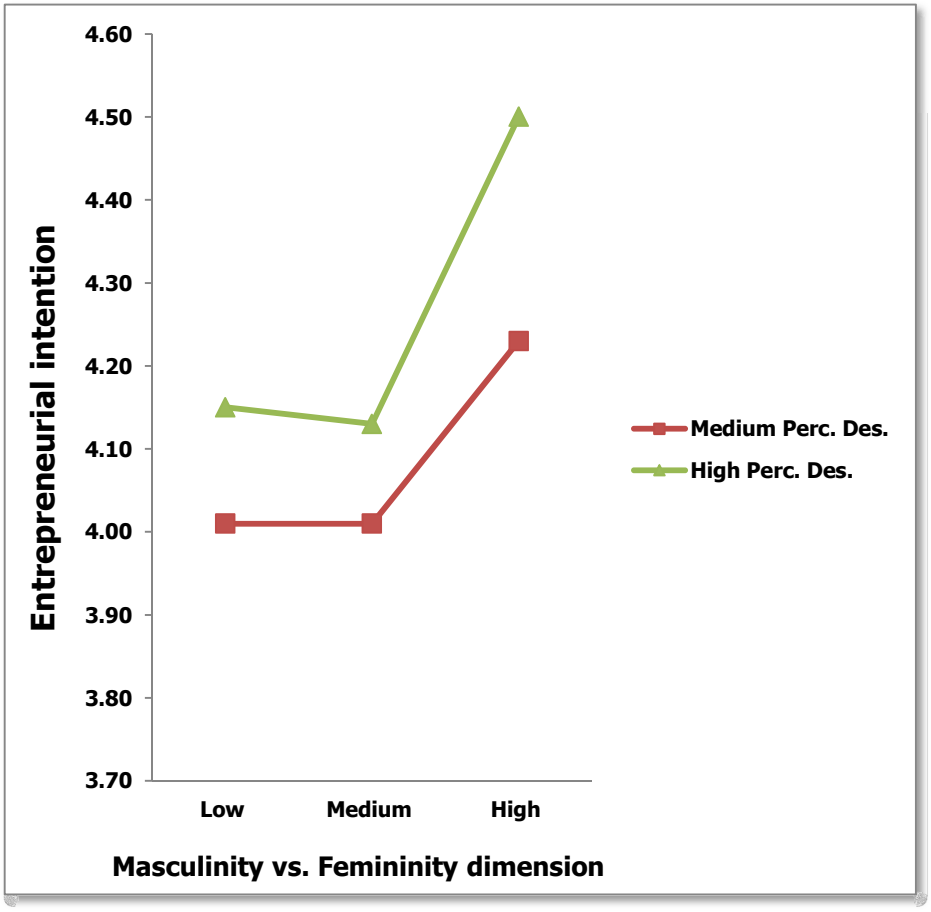

Figure B-7: Moderation effect of perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention among highlander group

Table B-39: Moderation effect of the perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention within the intermediary group in Madagascar's rural areas (9 cells means)

		Masculinity versus femininity dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.02	4.02	4.06
	HIGH	4.89	4.59	4.21

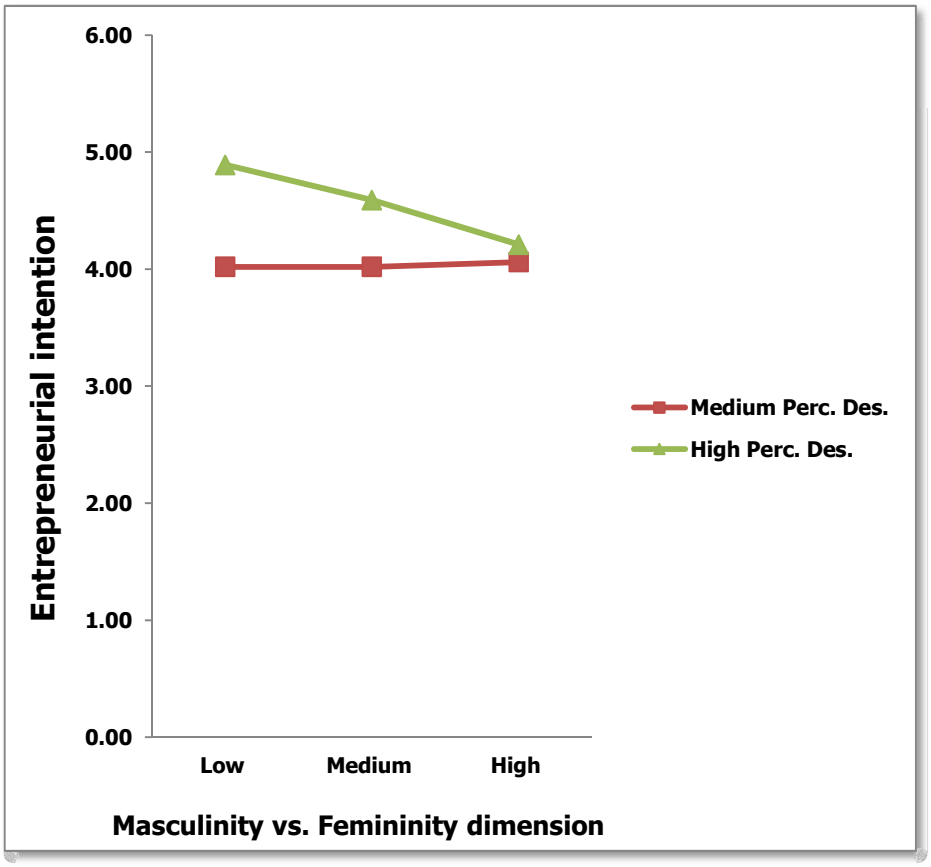

Figure B-8: Moderation effect of perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention among intermediary group

Table B-40: Moderation effect of the perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention within the overall group in Madagascar's rural areas (9 cells means)

		Masculinity versus femininity dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.01	4.01	4.00
	HIGH	4.46	4.45	4.00

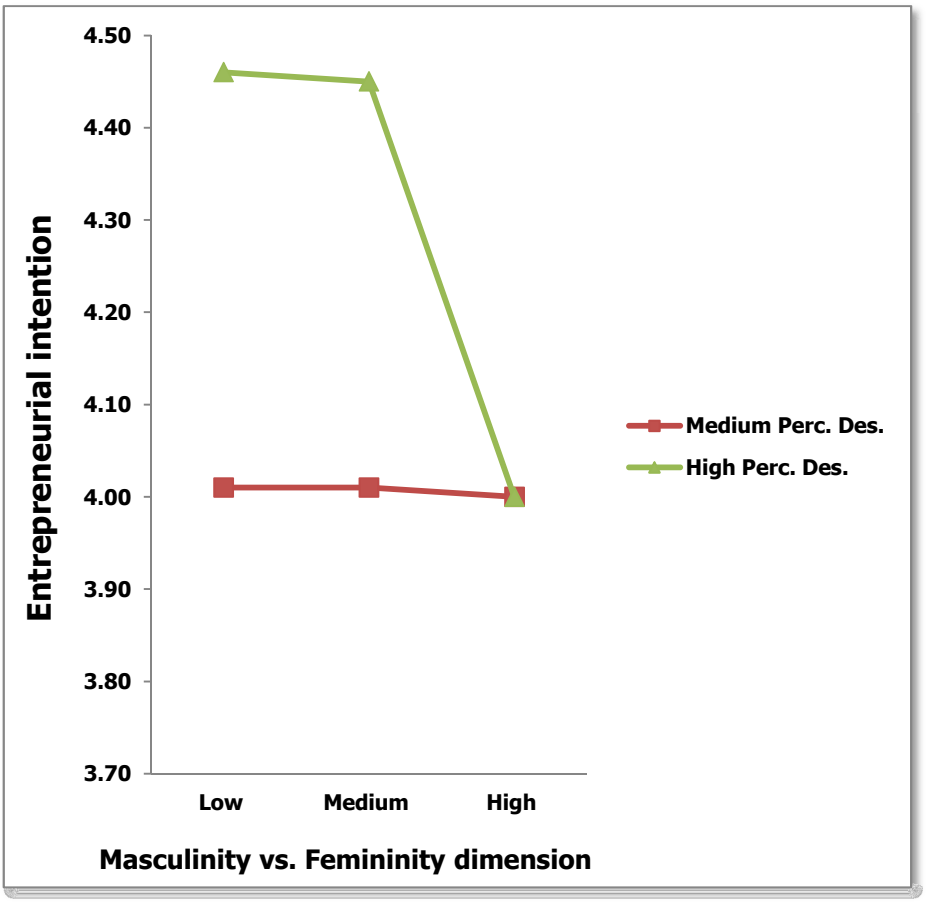

Figure B-9: Moderation effect of perceived desirability on the relationship between masculinity versus femininity dimension and entrepreneurial intention within the overall group

Table B-41: Moderation effect of the perceived desirability on the relationship between long-term versus short-term orientation dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Long-term versus short-term Orientation dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	2.00	2.35	2.00
	MEDIUM	4.02	4.01	4.09

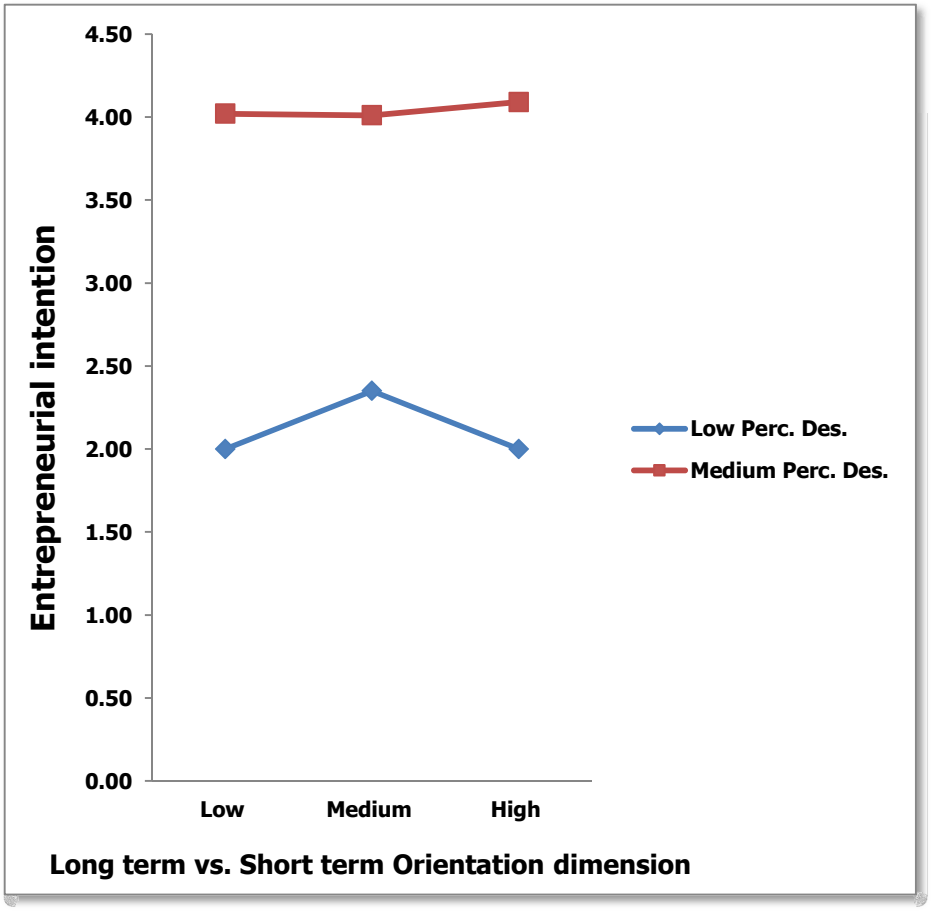

Figure B-10: Moderation effect of perceived desirability on the relationship between long-term versus short-term orientation dimension and entrepreneurial intention among highlander group

Table B-42: Moderation effect of the perceived desirability on the relationship between long-term versus short-term orientation dimension and entrepreneurial intention within the overall group in Madagascar's rural areas (9 cells means)

		Long-term versus short-term orientation dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	3.21	3.01	3.33
	MEDIUM	4.07	4.01	4.06
	HIGH	4.22	4.45	4.47

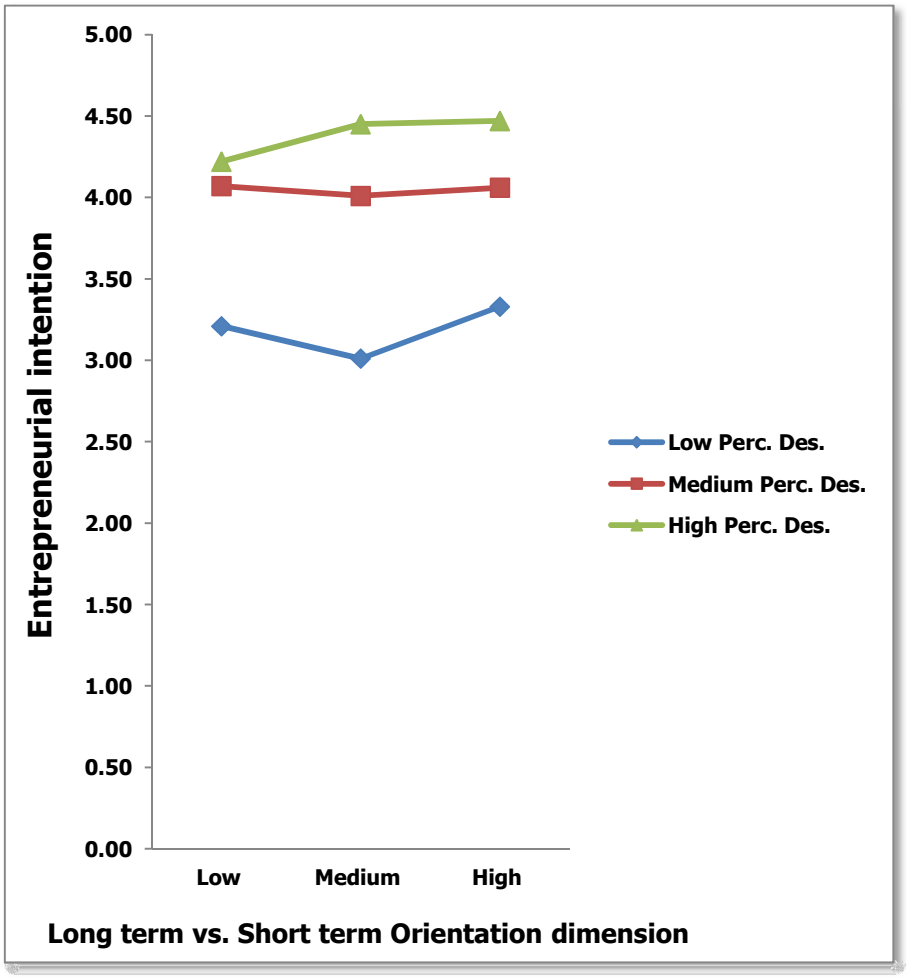

Figure B-11: Moderation effect of perceived desirability on the relationship between long-term versus short-term orientation dimension and entrepreneurial intention within the overall group

Table B-43: Moderation effect of the perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention within the coastal group in Madagascar's rural areas (9 cells means)

		Indulgence versus Restraint dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	4.00	3.77	3.00
	MEDIUM	4.12	4.01	4.02
	HIGH	4.35	4.60	4.79

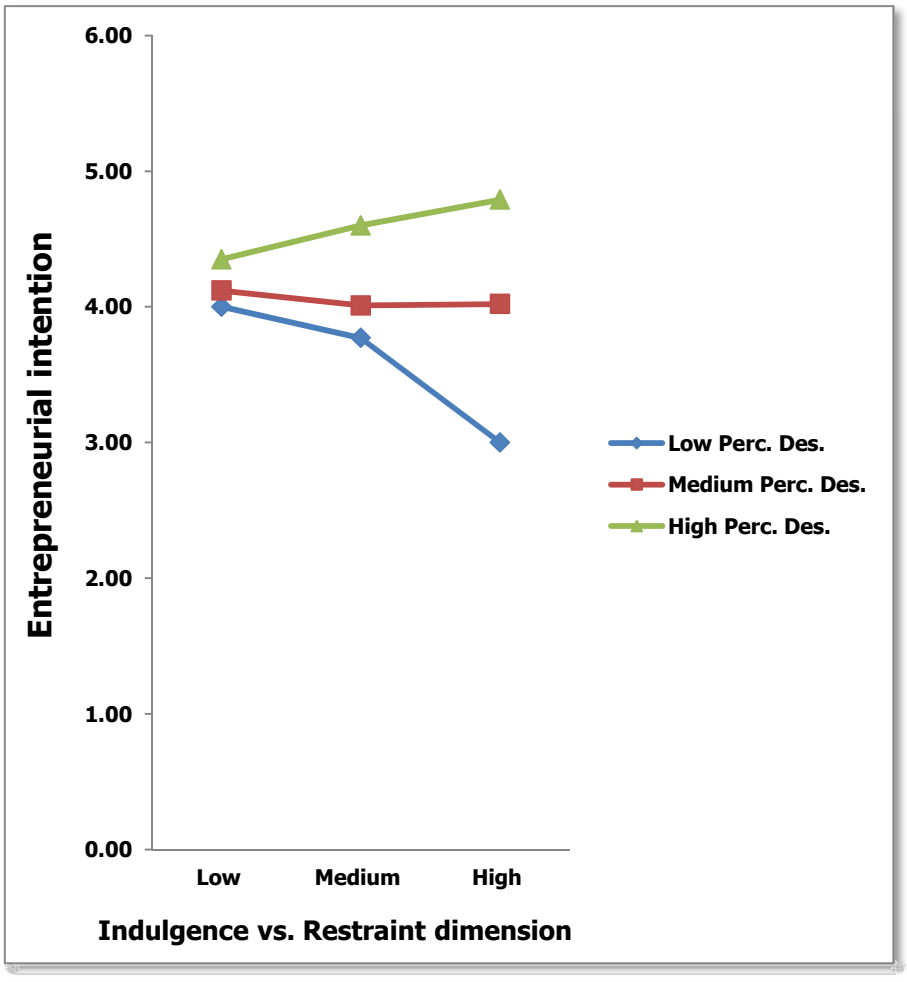

Figure B-12: Moderation effect of perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention among coastal group

Table B-44: Moderation effect of the perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention within the highlander group in Madagascar's rural areas (9 cells means)

		Indulgence versus Restraint dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	MEDIUM	4.02	4.01	4.16
	HIGH	4.07	4.15	4.31

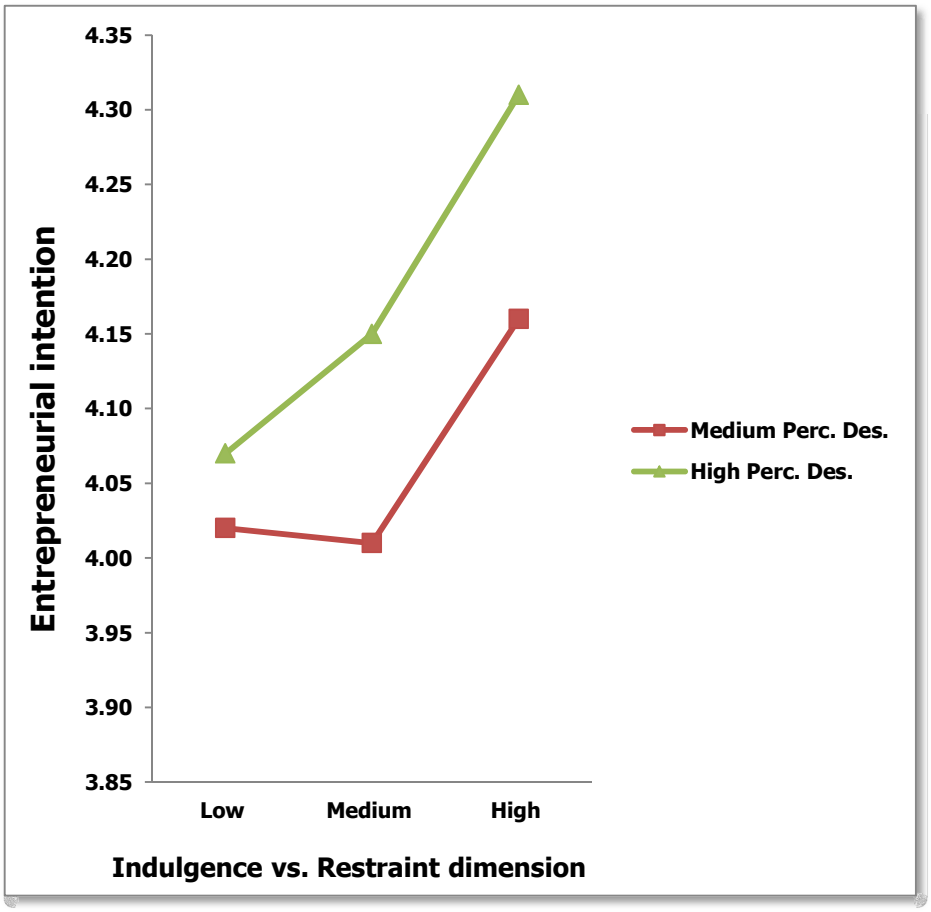

Figure B-13: Moderation effect of perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention among highlander group

Table B-45: Moderation effect of the perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention within the intermediary group in Madagascar's rural areas (9 cells means)

		Indulgence versus Restraint dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	2.00	3.24	2.33
	MEDIUM	4.08	4.02	4.01
	HIGH	4.35	4.60	4.52

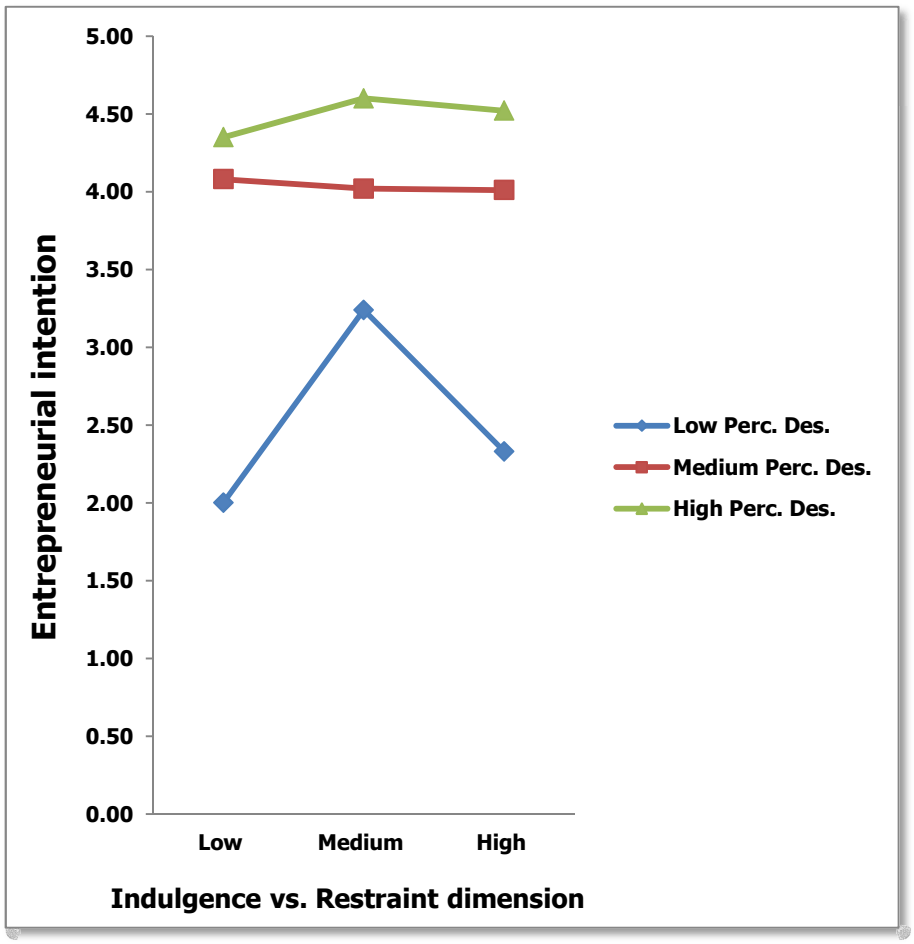

Figure B-14: Moderation effect of perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention among intermediary group

Table B-46: Moderation effect of the perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention within the overall group in Madagascar's rural areas (9 cells means)

		Indulgence versus Restraint dimension		
		LOW	MEDIUM	HIGH
Perceived Desirability	LOW	3.60	3.01	2.35
	MEDIUM	4.07	4.02	4.02
	HIGH	4.35	4.55	4.31

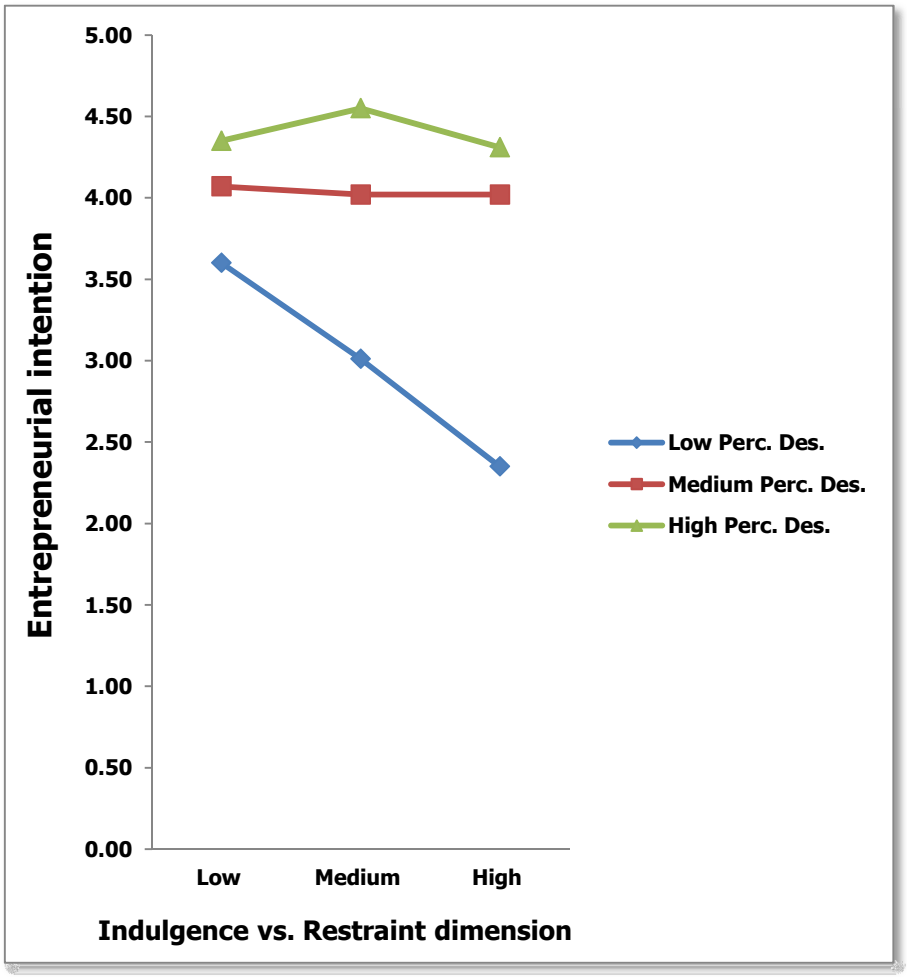

Figure B-15: Moderation effect of perceived desirability on the relationship between indulgence versus restraint dimension and entrepreneurial intention within the overall group

Table B-47: Means and standard deviations of studied scales within main ethnics groups in Madagascar's rural areas

Studied scales	Ethnics groups							
	Coastal		Highlander		Intermediary		Overall	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
Power distance dimension	1.89	.39	1.79	.61	1.91	.40	1.86	.48
Individualism versus collectivism	2.06	.48	2.01	.37	2.04	.56	2.04	.48
Uncertainty avoidance	3.96	.33	3.99	.26	3.99	.38	3.98	.33
Masculinity versus femininity	3.51	.93	3.54	.77	3.70	.87	3.58	.86
Long-term versus short-term Orientation	4.11	.24	4.09	.26	4.17	.30	4.12	.27
Indulgence versus Restraint	2.44	.78	3.55	.87	2.90	.94	2.97	.98
Perceived Desirability	4.13	.38	4.09	.44	4.18	.44	4.13	.42
Entrepreneurial Intention	4.09	.32	3.99	.37	4.11	.38	4.06	.36

Table B-48: Trichromatization of means values of studied scales within main ethnics groups in Madagascar's rural areas

Studied scales	Ethnics groups			
	Coastal	Highlander	Intermediary	Overall
Power distance dimension	**LOW**	**LOW**	**LOW**	**LOW**
Individualism versus collectivism	**LOW**	**LOW**	**LOW**	**LOW**
Uncertainty avoidance	**HIGH**	**HIGH**	**HIGH**	**HIGH**
Masculinity versus femininity	**HIGH**	**HIGH**	**HIGH**	**HIGH**
Long-term versus short-term Orientation	**HIGH**	**HIGH**	**HIGH**	**HIGH**
Indulgence versus Restraint	**LOW**	**HIGH**	**LOW**	**MEDIUM**
Perceived Desirability	**HIGH**	**HIGH**	**HIGH**	**HIGH**
Entrepreneurial Intention	**HIGH**	**HIGH**	**HIGH**	**HIGH**

Table B-49: Hofstede cultural dimensions and determinants of entrepreneurship

Cultural dimensions	Determinants of entrepreneurship
Power distance dimension	High power distance people are likely to be entrepreneurs Low power distance people are less likely to be entrepreneurs
Individualism versus collectivism	Individualistic people are more likely to be entrepreneurs Collectivist people are less likely to be entrepreneurs
Uncertainty avoidance	People with low measure of uncertainty avoidance are more likely to be entrepreneurs People with high measure of uncertainty avoidance are less likely to be entrepreneurs
Masculinity versus femininity	People with masculine culture are more likely to be entrepreneurs People with feminine culture are less likely to be entrepreneurs
Long-term versus short-term Orientation	People with long-term orientation culture are more likely to be entrepreneurs People with short-term orientation culture are less likely to be entrepreneurs

Note. From "Culture as a Factor in Entrepreneurship Development: A Case Study of the Kamba Culture of Kenya" by Bwisa, H. M. and Ndolo, J. M. (2011).

Table B-50: Hofstede cultural dimensions and determinants of entrepreneurship applied to the context of Madagascar's rural areas

Cultural dimensions	Levels	Profiles of entrepreneurship
Power distance	LOW	Less likely to be entrepreneurs
Individualism versus collectivism	LOW	Less likely to be entrepreneurs
Uncertainty avoidance	HIGH	Less likely to be entrepreneurs
Masculinity versus femininity	HIGH	More likely to be entrepreneurs
Long-term versus short-term Orientation	HIGH	More likely to be entrepreneurs

APPENDIX C: CONSISTENCY MATRIX

<table>
<tr><td colspan="6"><u>Problem</u>: To compare Malagasy main ethnic groups in terms of measures of cultural dimensions and perceived desirability, and to examine the effects of perceived desirability on the relations between cultural dimensions and entrepreneurial intention</td></tr>
<tr><th>Sub-problem</th><th>Literature Review</th><th>Hypotheses</th><th>Source of data</th><th>Type of data</th><th>Analysis</th></tr>
<tr><td>Sub-problem 1:
To compare cultural dimensions of Malagasy main ethnic groups</td><td>Couleur du Monde (2013)
Cooper et al. (2011)
dos Santos Góis Graça (2011)
Field (2013)
Hofstede (1980)
Hofstede (1994)
Hofstede (2001)
Hofstede et al. (2010)
INSTAT (2010)
Isajiw (1992)
Liñán et al. (2009)
Mada-id (2008)
Meyers et al. (2006)
Ramamonjisoa (2003)
Urban (2004, 2006, 2007 & 2008)
Yoo et al. (2011)
Zhao (2010)</td><td>H1: There is a difference in the measures of cultural dimensions among the main ethnic groups in Madagascar’s rural areas.</td><td rowspan="3">Survey using questionnaire directly administrated by trained interviewers</td><td rowspan="3">General information: O (Categorical)
Demographics: N & O (Categorical)
Cultural Dimensions : O/I (Numerical)
Perceived Desirability: O/I (Numerical)
Entrepreneurial Intention: O/I (Numerical)</td><td rowspan="3">Data entry on Google Drive, translated to Excel file for the clearing then to SPSS file for the statistics analyses through IBM SPSS 21 software

Descriptive statistics for the analysis of demographics data

Cronbach’s Alpha for testing the scale reliability

Factor analysis for testing the scale validity

One-way ANOVA for testing the H1 and H2

Multiple regression with interaction for testing the H3</td></tr>
<tr><td>Sub-problem 2:
To compare the level of perceived desirability of Malagasy main ethnic groups</td><td rowspan="2">Ajzen (1991)
Bandura (1997)
Cooper et al. (2011)
Couleur du Monde (2013)
dos Santos Góis Graça (2011)
Field (2013)
Kennedy et al. (2003)
Krueger et al. (2000)
Isajiw (1992)
Liñán et al. (2009)
Lüthje,et al. (2003)
Mada-id (2008)
Meyers et al. (2006)
Poon et al. (2006)
Ramamonjisoa (2003)
Shapero (1975)
Thompson (2009)
Urban (2004, 2006, 2007 & 2008)
Zellweger, Sieger and Halter (2011)
Yoo et al. (2011)
Zhao (2010)</td><td>H2: There is a difference in the level of perceived desirability among the main ethnic groups in Madagascar’s rural areas.</td></tr>
<tr><td>Sub-problem 3:
To assess the moderation effects of the perceived desirability on the relationships between cultural dimensions and entrepreneurial intention among Malagasy main ethnic groups living in rural areas.</td><td>H3: The relationships between cultural dimensions and entrepreneurial intention are moderated by perceived desirability among the main ethnic groups in Madagascar’s rural areas.</td></tr>
</table>